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THE JOURNAL OF LAND & PUBLIC UTILITY ECONOMICS



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Global War and Peace, and Land Economics

Leonard A. Salter, Jr.

Land Reform in Puerto Rico

S. L. Descartes

A Pattern of Successful Property Tax Administration:

III. Wisconsin Experience in Local Assessment

Harold M. Groves and A. Bristol Goodman

A National Fuel Policy: II. Anthracite—Another Chance?

Robert M. Weidenhammer and Walter H. Voskuil

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THE JOURNAL OF LAND & PUBLIC UTILITY ECONOMICS

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Founded by RICHARD T. ELY

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Richard T. Ely

RICHARD Theodore Ely, founder of this *Journal*, died October 4, 1943, at Old Lyme, Connecticut, the original home of the Ely family. He was born April 13, 1854, at Ripley, New York, and reared in Fredonia, New York. Fredonia was a transplanted New England town, so both heredity and environment collaborated to make him "a son of New England, a Connecticut Yankee," as he says in his autobiography. His father was a civil engineer and his mother an artist; both were profoundly religious and this influence is easily detected in the ethical aspects of his thinking and writing on economic and social problems.

Richard T. Ely was graduated from Columbia University in 1876 at the head of his class. He had majored in philosophy. His study of economics is described in his own words, as follows, "We had economics once a week and we read Mrs. Fawcett's *Political Economy for Beginners*." Having a graduate fellowship from Columbia University, he went to Germany to continue his study of philosophy at the University of Halle. However, here he came under the influence of J. Conrad, the economist, who was "chiefly interested in the problems of agrarian policy and agricultural statistics." Ely's interest in economics was strengthened and his attention was directed to agricultural and land problems by Conrad's teaching as well as by his association with Simon N. Patten, who was studying economics in Germany at that time.

After a year at Halle he went to Heidelberg to major in economics with Karl Knies and he studied political science as a minor under J. K. Bluntschli. He held both of these liberal and humanitarian teachers in high esteem and traces his own interest in the conservation of natural resources to Knies. In his autobiography he writes, "It is Knies, however, whom I am glad to acknowledge more than any other one man, as My Master."

In the year 1879 he received his Ph.D. degree, *summa cum laude*, from the University of Heidelberg but remained another year in Europe, attending the University of Geneva and working with Ernst Engel in the Royal Statistical Bureau in Berlin. There he attended lectures by Director Engel and Professor Adolph Wagner. Ely acknowledged his debt to Wagner for ideas which, along with the writings of John Stu-

art Mill, later became the starting point for his work on the distribution of wealth as conditioned by the institutions of the socio-economic order.

In 1881 he became associate professor of political economy at Johns Hopkins, where he worked until 1892. During this time he published his *French and German Socialism, Taxation in American States and Cities, The Labor Movement in America, Problems of Today, Social Aspects of Christianity*, and the *Introduction to Political Economy*. He also served on the Maryland Tax Commission and helped to found the American Economic Association, of which organization he was the secretary from the time it was organized in 1885 until 1892, and was president for the years 1900 and 1901. The founding of this association was an insurgent movement against the old order of economists who believed in certain underlying laws in economics which they thought to be true in all places and at all times. At Johns Hopkins, Woodrow Wilson, Newton D. Baker, John H. Finley, Charles Levermore, E. A. Ross, John R. Commons, W. A. Scott, Albert Shaw, Albion W. Small, and others came under the influence of Ely's teaching. Ely helped to make Johns Hopkins truly a graduate university.

In 1892 the Regents of the University of Wisconsin organized the School of Economics, Political Science and History and invited Ely to become its director to lay emphasis upon graduate work.

Ely was eminently successful as a teacher of graduate students. Dr. E. A. Birge, while Dean of the College of Letters and Science of the University of Wisconsin, said of him, "There is a quality in Professor Ely's teachings that gives a stimulus that lasts." As the leader of a seminar of graduate students, instructors and professors, Ely appeared relaxed in body but he had ever an alertness of mind, always ready to grapple with the problems of real life. He had a way of asking questions which set his students to thinking and searching for facts. He rarely asked questions that were not closely related to some need of mankind. He knew how to withhold his own opinions until the students had adequately wrestled with the problems. In the end he usually stated his own views but he respected the views of others when they differed from his own. He was always looking for students with "a spark of originality" and none of his stu-

dents failed to hear him quote from Richard Jones the phrase "Look and see."

All those who were his students know that Ely was a major force in making the University of Wisconsin a vital institution. In *Ground Under Our Feet* he says:

"The people of Wisconsin have never allowed their university to lose itself in academic unrealities. They knew they wanted something different and new, something responsive to their need, something which they called practical. Thus, research in the university has centered about problems of human progress, and many practical contributions have been made to the knowledge of problems in government action, in mastering the forces of nature, and increasing the amount and variety of production. The presidents and the members of the faculty have always worked in the glare of the public gaze."

Indeed, in 1894, only two years after his arrival in Wisconsin, Ely felt "the glare of the public gaze" and enjoyed the support of public opinion when his teachings were challenged by the State Superintendent of Education. The famous trial that followed is a matter of history. The important thing is that the verdict of the Board of Regents became a *Magna Charta* of academic freedom:

"In all lines of academic investigation it is of the utmost importance that the investigator should be absolutely free to follow the indications of the truth wherever they may lead. Whatever may be the limitations which trammel inquiry elsewhere, we believe the great state University of Wisconsin should ever encourage that continual and fearless sifting and winnowing by which alone the truth can be found."

The last sentence of the Regents' statement of exoneration of Ely is now inscribed on a tablet on Bascom Hall at the University.

Ely's constant interest in practical problems is shown by his writings and his contacts and associations with the world outside of academic walls. He always felt that economic theory should grow out of the study of the efforts of human beings to solve their problems of taxation, agriculture, rapidly-growing cities, public utilities, labor, capital, and land. Socialism and anarchism were burning issues in the 1890's. Ely was alert to these radical movements, as shown by his works on socialism and social reform. His own position was characterized by Theodore Roosevelt when he said of Ely, "He first introduced me to radicalism in economics and then made me sane in my radicalism."

From the beginning Ely approached economics from the standpoint of institutions. He believed that social reform consisted largely in adjusting the socio-economic institutions to changes in the life of the people. Whatever he had learned in Europe he adjusted to exploitative, dynamic and democratic American conditions.

Soon after he came to Wisconsin he began his work in land economics by giving a course in "Landed Property and the Rent

of Land." He also approached this sphere of economics through the conservation of natural resources. Ely gives great credit to Bernhard E. Fernow for awakening American thought on forest conservation. Fernow was brought to Wisconsin by Ely in 1896 to give a course of lectures on forestry.

Ely's publications after 1892 include *Socialism and Social Reform*, *Monopolies and Trusts*, *Studies in the Evolution of Industrial Society*, *The Outlines of Economics*, *Property and Contract in their Relations to the Distribution of Wealth*, and *Land Economics*. He was co-author of *The Foundations of National Prosperity*, a real contribution to the economics of conservation.

Ely received his LL.D. degree from Hobart College in 1892 and in 1923 from the University of Wisconsin, the first time Wisconsin had granted this degree to one in active service at this university. In 1924 his friends, colleagues and students celebrated his seventieth birthday by having his portrait painted. This portrait now hangs in the office of the economics department in Sterling Hall at the University of Wisconsin.

In 1920 Ely founded the Institute for Research in Land Economics and Public Utilities as a means of further realizing his ideal of combining research and teaching. He believed that the teacher without research becomes sterile and the research worker without an opportunity to teach stagnates. After his retirement from the University of Wisconsin and the transfer of the Institute to Northwestern University in 1925, the practice of combining research with teaching was continued. To get a wider audience than his immediate students he founded *The Journal of Land & Public Utility Economics*.

After moving to New York, Ely continued his work on land economics. He published his autobiography in 1938 under the title, *Ground Under Our Feet* and had other manuscripts in preparation at the time of his death. This is typical of Ely. In his response on the occasion of the unveiling of his portrait, he said:

"I love to look ahead and not back. If, please God, my life is spared, later on I may, like older men who have celebrated more advanced birthdays, indulge in exhortation—ninety is just the right age for that—but now I close, expressing both gratitude and the hope that I may share in the great achievement of the future, the prospect of which animates me and fills my mind and my heart."

this was the spirit which dominated his life until the end.

HENRY C. TAYLOR
GEORGE S. WEHRWEIN

November 5, 1943

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THE JOURNAL OF LAND & PUBLIC UTILITY ECONOMICS

NOVEMBER
1943



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Global War and Peace, and Land Economics

By LEONARD A. SALTER, JR.*

ALWAYS the purpose of social science is to assist in the resolution of social conflicts and confusions. This responsibility is most keenly felt in times like the present, for war is the extreme aftermath of unsolved social problems. Today every social science must ask whether the problems which preoccupy it are adjusted in terms of current relevance and on a scale commensurate with the real problems of humanity. Let us look at this question for land economics.

The answer arrived at in this paper is this: If we raise our sights to the full dimensions of the present social crisis, it is hardly possible to overestimate the significance of real land economics problems to the global war and to global peace.

Within the United States, one can justifiably point to the readjustment of land economics to the problems of expanding our national food production, preventing a hampering land inflation,

utilizing military sites, planning post-war man-land adjustments, and to a number of other new activities. All of these efforts are important; but do they represent the full reorientation that is required of land economics by the present state of affairs?

The reverberations of warfare have shaken the thought patterns of most Americans out of their predominantly isolationist perspective. This change has practically spelled annihilation for certain previously existing activities; it has given new life and meaning to others. Land economics in this country, though certainly not isolationist in the classroom, has been an almost purely American land economics in practice by force of circumstances. The new and essential internationalist outlook means that in the future the viewpoint and equipment of land economics must be whetted even more sharply, made more widely adaptable, and disseminated more extensively. The overwhelming force of events requires this much of land economics as a social science.

*Associate Professor of Agricultural Economics, University of Wisconsin.

This time we certainly know that the winning of the war and the winning of the peace are not two problems, but one. What is more, we also know full well that neither a war nor a peace is won if the peace is not *kept*. If arms and food can win a war and write a peace, the question still is: What will keep the peace? To answer this question, we may still need to make some reference to arms and food-stuffs, but we will err unpardonably if we try to close the question there. We will have a sufficient answer only if we clearly understand that the prime requisite for keeping a peace is to devise democratic, rational, and self-correcting ways to resolve social problems. In short, unless social progress becomes more scientific, in the best sense of that term, the world cannot have peace and progress.

World peace hinges not only upon the democratic resolution of social issues between countries but also upon the use of this method of reasonableness to solve problems within countries. There is no longer such a thing as a strictly civil war in the old sense. We now recognize that though Franco took up arms against his own government, it was a prelude to international violence. Hitler's seizure of Austria was no less an international problem because the Germans and Austrians had some common background. Nor was the Japanese robbery of Manchuria of any less global import because it occurred between Asiatics.

If, then, we see that a necessary part of winning the war in any significant sense is to assist the peoples of the world to solve rationally their dominant social problems, then we must also appreciate the problems of the landed economies of these people. For the fact is that, taking the countries of the world as a whole, few if any problems compare in extent and

intensity with rural land economics problems.

Thoughtful people seem to be agreed that either we must knowingly and purposefully prepare for "the century of the common man" or else we are now going through but one of a series of costly social eruptions. In country after country, the common man may never have seen a ballot, he may be illiterate, he may have no concept whatever of the formal structure of democratic government, but he certainly is cognizant of his relationship to the land he tills. Whatever other things they may or may not look for, countless hundreds of thousands of the world's common men will want to know how they and their neighbors stand in relation to the soil.

As Professor Ashby of Wales pointed out to the 1936 International Conference of Agricultural Economists, in almost every country of the world the prevailing land tenure system is "closely connected with the chief social institutions and with the laws and customs governing their maintenance and change." Landed property institutions are specifically "related to forms of the family, to systems of inheritance and disposal of property at death, to governing ideas of political organization, . . . to systems of government and administration, and . . . to all the systems and conditions which maintain economic and social differences between classes and are still commonly fundamental to processes of exploitation of human labour." In addition, "systems of land tenure may be defended because they are supposed to serve the mystical ends and purposes of a dominant party, or of a State of which the Government represents a special minority."

These observations may be elementary in land economics but they need wide rec-

ognition. In a country as industrialized and as youthful as ours, Americans are prone to forget that in vast areas of the globe and among vast millions of people rural land problems form the dominant social issue. Of course, one widely-held view is that we should expect post-war industrialization in the depressed agricultural countries. If, however, such mechanization is to be introduced considerably, it will also be accomplished slowly. Further, even if it is done with surprising rapidity, it probably cannot proceed far enough or fast enough to avoid the need for attention to agricultural land problems as such. Also, the industrialization will have to be achieved within the setting of a still predominantly rural economy. It will have to be a process of developing rural industries. Failure to appreciate this aspect of the situation will seriously impair any program of international assistance and cooperation which may be planned.

In sum, our ability to contribute to the establishment of democratic procedures for solving social problems will, in many crucial instances, be tested on the rock of the land question, as far as the masses of humanity are concerned. In addition, longer-run social reconstruction and productive advance will involve the transformation of completely agricultural economies to rural-industrial economies.

Even a cursory examination will show that among the real social issues around the globe few are more universal, more frequently strategic, more currently relevant, or more explosive than social relationships in land. The land aspirations of the European peasant have been so directly related to the establishment and overthrow of dictatorial regimes as to win for the peasant the title of "evil genius of dictatorship." In the tropical countries of the world, the primary requirement for

social justice and social progress is the establishment of satisfactory relationships between the natives, the non-natives, and the land. And in other parts of the world, both close to home and in distant reaches, numerically superior tillers of the soil are still in social and political inferiority because of the persistence of feudalistic land systems.

It is no exaggeration to say that in central, eastern, and southern Europe, in the tropics, and in the huge countries of Asia, a great paradox is this: How is it possible to get a land system that will make possible a greater degree of both (1) political and social democracy and (2) efficiency and productivity. In the depressed agricultural areas of the world there will be found land systems which are sources of conflict because they nullify equality of opportunity, or because they bar productive progress, or both. It should be pointed out here that in many depressed agricultural areas production per acre is not low but extremely high, and that in such areas the problem is not one of agricultural techniques but of social reorganization.

The nations in the democratic cause, to be sure, are not without their own unsolved land problems (as in our own South), and certainly they do not all have the same systems of landed institutions. The point remains valid, however, that these nations, comparatively speaking, have found ways to arrange their land systems so as to lessen social inequalities based on landed rights and to allow the adoption of advanced agricultural techniques. These regions include northern North America, the British Isles, Australasia, western Europe, the Low Countries, Scandinavia, and Russia. Countries in these areas are relatively free from the "equalitarian-efficiency paradox," as compared with other sections of the world.

The difference between these groups of countries in this respect is not a mere coincidence; rather, it adds to the deep-seated importance of real land economics problems to the present democratic crisis.

The history of central and southern Europe in the last two decades can be written largely in terms of demands and promises of land reform. After World War I in Germany, for example, there was hope that the power of the Junker class would be broken by the division of their East Prussian estates, but the Republic failed to carry out the task. Later, the peasants supported the Nazis, only to earn for themselves a state of serfdom while the Nazis left the Junker estates intact in order to win over the support of the army leaders.

In Italy the Fascists also failed to fulfill their promises of land reforms. Today the Italian peasant still looks forward to the future dissolution of the huge latifundia of southern Italy and Sicily. In Spain the Republican government inaugurated the reforms demanded by the peasants, but before the program was carried out the armed minority rebellion put a stop to the movement. Democratic aspirations for Spain, Italy, or Germany will be hopeless unless a way is found to resolve their land problems.

Every country in the Balkan and Baltic regions initiated land programs during or immediately after the last war. Most of these plans aimed at the redistribution of large estates but the progress of these programs ranged from a considerable division in northern Yugoslavia to relatively insignificant changes in Hungary. In all of these countries the task of promoting agricultural production was made more difficult under the rearranged land system. In other cases, as in southern Yugoslavia, the land program was on the order of sim-

ply making a first break in the bonds of outright feudalism. All of the Balkan and Baltic states, including Poland, are agricultural countries, and for them the "equalitarian-efficiency paradox" in agriculture is a strategic national issue.

In the tropical countries of the world we again find the transformation of landed institutions to be a basic problem of national policy in the small, nominally independent countries and a prime issue of colonial policy in the tropical dependencies. Throughout the tropical belt of Africa, the Caribbean, the South Pacific, the East Indies, and the Middle East, any program of lifting the native populations to positions approaching political and financial independence must begin with the land question.

It may fairly be said, for instance, that the improvement which was felt in the former German African colonies after the last Armistice can be stated in terms of the changes introduced in the colonial land policies for those areas. Although the success of the League of Nations' mandate policy has not been uniform—as, for example, between South West Africa and British Togoland—the point is that the mandate provisions laid great stress on limiting the conditions under which native land systems were subject to correction. Similarly, the improvements in the administration of other dependencies which have long remained within French, Dutch, or Portuguese influence turn largely on the approach to the land systems of their colonial outposts, as is illustrated in French Soudan, Java, and Mozambique.

Large land problems plague the tropical dependencies, whether the intent of the controlling government is merely to make way for the outright exploitation of the labor and resources of the natives or to

prepare the native population for independence. If private enterprises are relied upon to supply the capital necessary to expand the marketable output of tropical countries, the investors ask that the security of their venture be provided in the form of landed interests. But the transfer of such rights in land often is quite meaningless in terms of the native land system. As Dr. Leake has pointed out, the plantation system can provide the capital and technical controls which are needed to advance tropical farming but it lacks the human requirements of enlightened colonial policy.

But even if less imposed means are devised to promote tropical agriculture, it is still most often prerequisite that the native land system be somehow adjusted, especially where such customs as shifting cultivation, fractionation, subinfeudation, or excessive tithing are a part of the indigenous land economy.

There is no disagreement among authorities as to the belief that an underlying barrier to social advancement in Asia is the condition of its land system. It has been pointed out, for instance, that the greater block to the agricultural development of India is in its predominant landed institutions rather than in prevailing soil management practices. China, Japan, Burma, Thailand, and India (especially since the decline of its household industries) are countries where the land economy is desperately confounded by extremely undemocratic tenancies which are often piled one on top of the other, by minute fractionation and complex parcellization, by excessive landed debt, by emotional but rigid social customs, and by outright human exploitation.

The pertinence of land programs to the current situation is illustrated by the present division of opinion between the Kuo-

mintang party government of China and the Fourth and Eighth Independent Chinese Armies. Recent reports point out that, in the territories where these armies are operating, extensive land reforms already have been effected; and that the central difference between the Chiang Kai-shek government and the Independent Army leaders is whether moderate or severe methods should be used to accomplish these land reforms.

Fascism in Japan is related to the struggles which arose between the landlords and the tenants of that country as the latter began to dissolve their feudal duties following World War I, and to the vigorous opposition of the landlords to proposed programs of reconstruction. Tenancy is admittedly the fundamental element of agricultural progress which, in turn, is essential to the solution of other economic problems in the Island.

These references are made to countries scattered around the globe only to indicate very briefly that land economics problems are world-wide problems in a very significant sense. Important as is the work on the land economics problems within the United States, it is possible that by our very preoccupation with such work we may fail to recognize the full explosive force which land economics problems represent on a global scale. While we have any number of unsatisfactory aspects of our landed institutions here at home, fortunately they do not yet approach the momentous importance of land problems in the above-mentioned foreign areas. In addition, the character of our problems in this country cannot be influenced by the directions which other countries take in attempting to reset their internal land systems.

There is no need for American land economists to forsake their work in this

country or to write down the significance of the national problems to which they are devoted. Nor is there any intention of suggesting that American land economists are ready to resolve the world's great woes. The point to be made is just that the approach, the viewpoint, and the equipment for attacking social problems which distinguish those who have some proficiency in dealing with land economics problems have an even wider importance than American land economists themselves are likely to realize. Further, as world affairs move forward on a more international basis, the development of land economics must encompass compara-

tive systems of landed institutions so that American land economists can gain better comprehension of land problems in this country and may also contribute to the analysis of the land problems of other countries of the world. Finally, land economics in this country has the responsibility of making clear to those who take leadership in contributing to the establishment of democratic procedures for solving social problems elsewhere that in the majority of cases, by far, the land system of a country will constitute a large source of social conflicts and will be a vital element in programs designed to advance social justice and material progress.

When the above article on "Global War and Peace, and Land Economics" by Leonard A. Salter, Jr., was submitted to *The Journal* it created stimulating discussion among its Editorial Readers. Several scholars who are now devoting their energies to problems of the post-war world read the manuscript. Soon thereafter and preceding actual publication of the manuscript, a request came in for copies to be distributed to members of one governmental group whose primary concern is with just such problems as are outlined in this article.

The Journal is giving preferential consideration to manuscripts which focus this global concept on one of its national, regional or sectional aspects. The article immediately following, on "Land Reform in Puerto Rico," is apropos. The social and economic changes taking place on this small land area are provocative and, to the land economist, very timely.

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Land Reform in Puerto Rico

By S. L. DESCARTES*

The Setting

WHEN two million people must make a living on a 3,435 square-mile agricultural island—of which only 47 per cent was reported as cropland by the farmers in 1940¹—widespread land hunger is to be expected. Such is the situation in Puerto Rico. These facts explain the emotional intensity attached to the land tenure problem in the Island.

Land concentration and absentee ownership in its modern form developed rapidly after the advent of the American government in Puerto Rico in 1898. In 1901, very soon after the first civil government under American sovereignty was established, a system of free trade between the United States and the Island was inaugurated. Free trade with the United States made the cultivation of sugar cane and tobacco in Puerto Rico very profitable. Capital and technical talent began to flow into the Island to exploit these enterprises. The rapid growth of the sugar industry was accompanied by the purchase or lease by corporations, or affiliates of corporations, of large areas of the most fertile lands of the Island. These interests, in most cases, were also the owners of the sugar mills where the crop was processed into sugar.

Land concentration probably reached its peak around 1930. In 1934-35 sugar mills and allied interests controlled 400,000 acres of land of which 280,000 were

owned and 120,000 were leased.² Lands controlled by sugar mills and related interests constituted over 50 per cent of all the land in farms growing sugar cane. Gayer and Homan estimated that the big four American-owned companies and allied interests owned about 107,000 acres and leased approximately 78,000 acres—operating a total of 185,000 acres, or 46 per cent of all the lands operated by sugar companies.

The predominance of large farms in sugar cane cultivation is an undeniable fact. One hundred fifty-six farms (of more than 500 acres) comprised 498,592 acres, or 65 per cent of all the farm land growing sugar cane in 1934-35.³ Even in the 1941 crop, after some improvement in the land concentration situation, 0.4 per cent of the farms growing sugar cane produced 56 per cent of the crop.⁴

Land concentration never became an acute problem in the tobacco-growing area. Some large farms were purchased by corporations but the acreage involved was relatively unimportant compared to the total area in tobacco farms or to the extensive holdings of corporations in the sugar cane area. Furthermore, after the marked reduction in the price of tobacco

* A. D. Gayer, P. T. Homan and E. K. James, *The Sugar Economy of Puerto Rico* (New York: Columbia University Press, 1938), pp. 105-110.

¹ *Op. cit.*, p. 103. The usual unit of land measure in Puerto Rico is the *cuerda*, equivalent to 0.9712 of an *acre*, or 0.39 of a *hectare*. Because of the small difference between the two units of land measurement, they are used interchangeably. In many cases *acre* is used in the sense of the English translation of *cuerda*.

² Based on figures from Agricultural Adjustment Agency, San Juan office.

* Chief Statistician, Office of Statistics, Office of the Governor, San Juan, Puerto Rico.

¹ 16th Census of the United States, 1940, *Puerto Rico, Agriculture*.

beginning in 1927, those corporations which had previously planted wrapper-tobacco quickly abandoned the agricultural phase of their businesses. They leased their lands or permitted squatters to plant under share-cropping agreements.

The concentration of land control was not the only grievance of the people of Puerto Rico against the sugar industry. There was widespread discontent over the distribution of the proceeds of the sugar industry among the various factors cooperating in its production. An illustrative list of the disadvantages of the sugar industry in the middle thirties is that of the Puerto Rican economist, Esteban A. Bird. He mentions inadequacy of wages; seasonal unemployment; poor housing conditions; greater under-assessment than in other regions; larger concentration of land than in other economic regions; absenteeism; unfair liquidations to "colonos" (individual farmers); wastefulness due to failure to utilize raw materials to fullest extent; too large a control over thousands of inhabitants; interference with civic life; and interference with the development of social freedom. It is fair to state (as did the author in March, 1941, when his study—made in 1937—was published) that "many of the evils of the sugar economy have been . . . [lessened] . . . but the fundamental evils remain unchanged and require action devoid of passion and prejudice."⁶ It is not surprising, in view of the preceding exposition, that land reform in Puerto Rico has meant primarily the retrieval of the large estates which belong to the sugar companies in order that the operation of those lands would result in wider social benefit.

⁶ Esteban A. Bird, *A Report on the Sugar Industry in Relation to the Social and Economic System of Puerto Rico*, Senate of Puerto Rico, 15th Legislative Assembly, First Legislature, 1941, Senate Document No. 1.

The great importance of the sugar industry in the Island's economy must be made clear. Bird credits the industry with paying higher wage rates than has prevailed in other industries; being the largest source of employment; being the largest contributor to the increase of wealth and income; furnishing the government with one-fourth of its revenues; having good management from the standpoint of the investors; and being a provider of credit (production) at rates cheaper than other agencies.

Legal Basis for Land Reform

In 1900 the Congress of the United States passed the Foraker Act, the first Organic Act of Puerto Rico. It provided for civil government under the sovereignty of the United States. That same year, and coincident with the enactment of the Foraker Act, a joint resolution was passed which limited to 500 acres the land owned and controlled by corporations. In 1910 and in 1917—in the course of discussions on proposed changes to the Organic Act—attempts were made to revise the 500-acre land control limitation on corporations. These attempts were unsuccessful; and contrariwise, the Congress of the United States specifically retained the 500-acre limitation in Article 39 of the Jones Act, the second and more liberal Organic Act of the Island, passed in 1917.

Despite the clear provision in the statutes, reaffirmed in 1917 by the Congress of the United States, the 500-acre land ownership limitation was completely ignored and openly violated until 1936. From 1900 to 1936 the only attempts at enforcement were indirect. In 1913 and in 1935 some registrars of property refused on three different occasions to record holdings acquired by corporations in

violation of the 500-acre law. In these cases the Supreme Court of Puerto Rico ordered the registrars to record the properties and stated that action designed to enforce the 500-acre limitation rested with the attorney general.

In 1935, and at the same time that the federal government began to show a great interest in the formulation of an economic rehabilitation plan, the United States Department of the Interior, being the executive department in charge of Puerto Rican Affairs, adopted the policy of enforcement of the 500-acre law. In 1936 the second Island-born attorney general, Benigno Fernández García, was appointed by the President of the United States. Upon assumption of office he declared his intention of enforcing strictly the 500-acre law. A division devoted to the 500-acre litigation was established in the Department of Justice of Puerto Rico. Miguel Guerra-Mondragón and Rafael Rivera Zayas, two distinguished Puerto Rican lawyers who were well-versed in this field and greatly interested in the enforcement of the 500-acre law, were appointed as counsel in that division.

Also in 1935 a bill was presented before the insular legislature which gave original jurisdiction to the Supreme Court of Puerto Rico to hear, under quo-warranto proceedings, cases involving the land tenure limitation on corporations. The bill was presented to the legislature (which was at that time controlled by the Coalition of the Union Republican and the Socialist parties) by Luis Muñoz Marín, now president of the Popular Democratic party and of the insular senate, and by Bolívar Pagan, now president of the Socialist party and resident commissioner of Puerto Rico in Congress. The bill became Law No. 33 as of August 9, 1935. Its purpose was to expedite the legal pro-

ceedings necessary to enforce the 500-acre limitation.

Proceedings under Law No. 33 of 1935 were instituted against several corporations in January, 1936. The Supreme Court of Puerto Rico, on July 30, 1938, decided the first case in favor of *The People of Puerto Rico*, upholding the enforcement of the 500-acre law. This decision was quickly appealed by the defendant and, after having been reversed in the Boston Circuit Court of Appeals, was upheld by the Supreme Court of the United States on May 25, 1940. In brief, the decision found the defendant corporation guilty of holding land in violation of the law, imposed fines and costs amounting to \$7,000, and ordered the dissolution of the corporation. The attorney for *The People of Puerto Rico* appeared immediately before the Supreme Court of Puerto Rico and moved for the appointment of a receiver to execute the decision of the court. The court acted favorably on this motion and the defendant appealed. The final decision, pronounced by the United States Supreme Court on March 16, 1942, established the legality of the appointment of a receiver to enforce the dissolution of the corporation and the alienation of the lands illegally operated. A few days later the receiver was appointed.⁶

In the six years from January, 1936, to March, 1942, the complete cycle of litigation establishing the legality of each one of the steps necessary to enforce the 500-acre limitation was completed. The legal basis for action was established. The people of Puerto Rico were confronted with

⁶ The author is obliged to Miguel Guerra-Mondragón, attorney in the 500-acre litigation division of the Insular Department of Justice, for data on the history of the legal efforts to enforce the 500-acre law and for his revision and comments on the portions of this paper which deal with legal aspects of the land reform.

the responsibility of executing a land-reform program that affected the very life of its principal industry.

Political Attitudes Toward Land Reform

The agitation for land reform, designed to break up the large sugar estates, and the movement in favor of small farms date back to the early years of the century. Slogans condemning latifundio and absenteeism were political ammunition during the entire period after 1900. In practically all political campaigns land concentration and absenteeism have been strongly attacked by all parties contending at the polls.

There is a noteworthy agreement in the programs or platforms of all major parties in regard to agrarian reform and the desirability of the small, or family farm. The Socialist party's program, approved in the Mayaguez convention held in August of 1932, binds the party to the approval of "... punitive legislation to make effective Article 3 of the Joint Resolution of the Congress of the United States of America, approved May 1, 1900, and ratified in Paragraph 2 of Article 39 of the Organic Act of Puerto Rico, limiting the possession and operation of land by corporations to 500 acres." The free electoral pact of the Coalition of the Union Republican and Socialist parties for the general elections of 1936, in Article 8 of their minimum program, calls for "the continuation of the agrarian policy initiated by the Coalition" and in Article 15 pledges "to continue our program of extension and development of subsistence farms, providing them with working equipment, seeds, domestic animals and homes, and providing the necessary means to make the homestead laws effective."

As previously stated, Law No. 33 of 1935 which was designed to expedite the enforcement of the 500-acre limitation, was approved during a period when this coalition held a majority in the legislature. The coalition explained its agrarian policies in its Rehabilitation Plan, published as Senate Concurrent Resolution No. 1 of February 12, 1935, and described below. The Popular Democratic party pledged its legislators in 1940 to vote for the enactment of a land law to enforce and implement the 500-acre limitation. The "Unificación Puertorriqueña Tripartita" committed itself in its socio-economic program to "the expansion of the program of farms and homesteads," "the extension of the system of subsistence farms," and "the preservation and the enactment of those laws on land tenure that will consolidate and strengthen the base of our general economy."⁷

Experiences in Land Reform

Homestead Commission. Positive legislation designed to achieve some measure of land reform is also of relatively long standing in Puerto Rico. The first law passed after 1900, providing for the creation of small farms by the state, was enacted on June 11, 1921. It established a homestead commission empowered to create workingmen's settlements in the cities, to build houses for artisans and laborers, to create small farms to be leased to farm laborers, and to grant them title thereto. The homestead commission and its successor, the Homestead Division of the Insular Department of Labor (up to June 30, 1942) had established 2,074 small farms comprising a total area of 24,459

⁷The political parties mentioned here polled practically 100 per cent of the votes cast in the 1940 elections.

cuerdas.⁸ Unfortunately, many of these farms were established in remote, rugged, interior areas where the soils were of low productivity. There is no doubt, however, that a considerable improvement in the plane of living of formerly landless workers was realized by settling them on these farms, despite the smallness of most of them. Such an improvement was especially noticeable in those areas which were relatively productive and accessible.⁹

The Chardón Plan. In 1935 a policy commission was appointed by the President of the United States for the purpose of drafting a rehabilitation plan for Puerto Rico which would serve as the basis for a reconstruction agency. The Commission's report, best known as the "Chardón Plan," states that "progressive landlessness" was one of the most important economic problems of the bulk of the Puerto Rican people. As originally conceived, the plan provided for the purchase by the government of what were termed "sugar cane marginal lands." On these lands, which would be retired from cane growing, 10,000 subsistence farms were to be established. Sugar cane growers formerly established on these marginal lands were to be given the opportunity of buying "good sugar cane lands" in the lowlands in exchange for their marginal lands. These "good sugar cane lands" would be acquired by the reconstruction agency from the corporations, which (it was assumed) would not have great use for them in view of the recently-passed extension of the AAA restrictions to sugar cane growing (Jones-Costigan Act of June, 1934).

⁸ Official data from the Homestead Division of the Insular Department of Labor.

⁹ J. E. McCord and S. L. Descartes, *A Farm Management Study of Small Farms in Three Areas of Puerto Rico*, University of Puerto Rico Agricultural Experiment Station Bulletin 40, 1935.

The plan also provided for the establishment of 8,000 subsistence farms of 3 acres each in the coffee area, 2,000 parcels of 2 acres each in the fruit area, and 5,000 parcels of 3 acres each in the tobacco area. Land for subsistence farms was to be obtained from the owners at half price in return for free labor that was to be provided for the rehabilitation of the plantations. Dwellings resistant to hurricanes were to be built for the resettlers on these plots. Central service farms to provide costly equipment, seeds, pure-bred animals, and technical advice were to be established in resettlers' communities.

The 1935 Legislative Plan. The Chardón Plan met with considerable opposition from the majority of the legislature. The Coalitionist majority, composed of the Union Republican and Socialist parties, submitted its own plan for economic reconstruction in opposition to the Chardón Plan. It was published as Concurrent Resolution No. 1 of the Senate of Puerto Rico, dated February 12, 1935. The avowed purpose of the Resolution was to set forth ". . . to the President and the Congress of the United States of America the economic and social evils confronting *The People of Puerto Rico . . .*," and to point out ". . . specific recommendations for a complete economic-social rehabilitation of the Island." In regard to land reform, the document stated that one of the fundamental objectives of the plan was "to establish a system for the recovery and redistribution of the land, giving all the social classes of our country an opportunity to obtain and exploit it, according to their respective means and ability to make it produce." To this end, the Resolution recommended ". . . the establishment of subsistence farms for those laborers on whom a heavy burden of capitalization could not be imposed, for it

would condemn them to failure; the establishment of the small rural property, that is, the true subsistence farm capable of providing for all the needs of the family with the produce thereof, without need of the farmer's entering into competition with the urban population in the field of remunerated occupation . . .," and that ". . . those who engage in the cultivation of special crops, such as sugar cane, tobacco, fruits, etc., should be given an opportunity to acquire farms of this type, thus creating many property owners where today a few control everything."

To carry out these objectives, the plan proposed the acquisition by the government of the farms mortgaged to the Federal Land Bank which were in danger of foreclosure. These farms were then to be subdivided into self-sustaining farms but a portion was to be retained for the former owner. This work was to be carried out by the Homestead Commission with an insular appropriation and with \$16,000,000 of federal funds that, as it was requested, should be allotted for this purpose from the expected appropriation for the rehabilitation of Puerto Rico. The Homestead Commission was to be authorized to build dwellings, provide the necessary fertilizer, seeds, animals, and technical help. The properties were to be leased with the right to eventual ownership, according to the terms established by the Homestead Commission. The plan requested the extension to the island of the benefits of the National Industrial Recovery Act by appropriating for this purpose not less than \$2,000,000 out of the \$25,000,000 available under Section 208 of the aforementioned act for the establishment of subsistence homesteads.

Puerto Rico Reconstruction Administration. The Puerto Rico Reconstruction Administration, the agency that was to

execute the reconstruction plan outlined by the Chardón Committee, was created by Executive Order of the President, May 28, 1935. In actual operation the Puerto Rico Reconstruction Administration deviated in some respects from the general principles outlined in the Chardón Plan described above. In the field of land reform in the sugar cane area, the original recommendation that "marginal sugar cane lands" should be acquired in exchange for "good sugar cane lands" and divided into subsistence homesteads was never carried out.

The acquisition of certain lands and a sugar mill known as "Central Lafayette" constituted the most momentous deed of the Puerto Rico Reconstruction Administration in the field of land reform in the sugar cane region. This property, owned by an absentee French family and comprising 10,000 cuerdas of land in a very productive sugar cane region, was acquired in 1936. The best lands of the estate, aggregating 4,560 cuerdas, were divided into 12 land cooperatives, each with less than 500 acres. These land cooperatives were to be eventually owned and managed by the laborers. Loans were made to them for the value of the purchased lands and for operating capital. The loans were guaranteed by a mortgage on the lands and by the growing crops. The Puerto Rico Reconstruction Administration reserved the right of exercising the voting power of the laborers' members. By virtue of an interconveyance contract, each cooperative was liable for all the debts of the other eleven and all income and expenses were shared alike by all. The 12 land cooperatives entered into a management contract with the Puerto Rico Reconstruction Administration and were operated by a manager appointed by

that agency. In substance, the 12 land cooperatives were operated as a unit.

After three years of operation the land cooperatives found themselves in a very difficult financial position. An investigating committee appointed by the Puerto Rico Reconstruction Administration recommended the reacquisition of the lands sold to the land cooperatives, their division into small farms—consistent, as far as possible, with cultivating efficiency—and their sale to individual farmers. The Lafayette Investigating Committee, however, concluded that the failure of the cooperatives was not due to their set-up as cooperatives. The committee held that the failure was explained by a faulty financial organization, excessive mortgage indebtedness, low operating efficiency reflected in high costs of operation, low yields, and very high indirect costs. The committee further stated that, in view of the lack of education and the prevailing attitudes of the laborers, the success of laborers' agricultural cooperatives in that area was doubtful.¹⁰

Roughly, 4,500 cuerdas were reconveyed to the Puerto Rico Reconstruction Administration by the land cooperatives and distributed into 72 parcels which were sold to 65 different purchasers who bought properties ranging in size from 11.4 cuerdas to 138.9 cuerdas and from \$2,839 to \$67,057 in price. In addition, 315 small farms varying in size from 3.3 cuerdas to 32.5 cuerdas were established on other lands which had lower productivity than those originally sold to the land cooperatives. The Puerto Rico Reconstruction Administration is still directly managing a large acreage of pasture land, some of which may be divided into

small farms. There were also established in the Lafayette area 507 subsistence farms of about one acre each.¹¹

On the northern coast of the Island the Puerto Rico Reconstruction Administration made a loan to a group of "colonos" (individual sugar cane farmers organized as a cooperative) for the acquisition of a medium-sized sugar mill known as "Los Canos." The same group borrowed from a private bank for the acquisition of the lands that were formerly owned by those same mill interests. In the transaction, 5,466 cuerdas belonging to the mill interests were purchased and leases covering 1,125 cuerdas were taken over. In this area, therefore, the lands previously operated by a corporation are now operated by 19 farmers who bought parcels ranging in size from 64 to 552 cuerdas.

That part of the Chardón Plan relating to the establishment of subsistence farms for the laborers in the coffee, tobacco and fruit growing areas has been carried out to a considerable extent by the Puerto Rico Reconstruction Administration. Up to June 30, 1943, there had been established 8,457 of the 2- and 3-acre plots proposed in the coffee, tobacco and fruit rehabilitation programs of the Chardón Plan. For this purpose 25,480 cuerdas had been purchased.

A land distribution procedure not mentioned in the Chardón Plan has also been used. Farms aggregating 8,754 cuerdas were acquired in various regions of the Island and were divided into 608 farms, ranging in size from about 4 to 20 cuerdas. One thousand and sixty-two subsistence farms, almost all of about one cuerda in size, were also established on these farms. Two hundred and twelve squatters found living on these farms were settled

¹⁰ Report of the Lafayette Investigating Committee to the Assistant Administrator, Puerto Rico Reconstruction Administration, August 7, 1940.

¹¹ Official figures of the Puerto Rico Reconstruction Administration.

on one-quarter-cuerda plots. Detailed information on the land acquisitions and farms established by the Puerto Rico Reconstruction Administration is given in Table I. One of these farms (the Castañer project), located in the coffee area, is being operated directly by the Puerto Rico Reconstruction Administration.

Undoubtedly, the plane of living of an

agricultural laborer who settles on a small farm or even a small plot is improved, provided of course that the same opportunities for outside work are maintained and that the value of the crops he raises is higher than the value of those obtained from the lands which his landowner had previously let him plant.

A farm management study of the small

TABLE I. AREA ACQUIRED; UNITS ESTABLISHED IN FARMS, SUBSISTENCE FARMS, SQUATTERS' SETTLEMENTS; BY NUMBER AND SIZE. PUERTO RECONSTRUCTION CORPORATION, JUNE 30, 1943.
(In Cuerdas)

PROJECT	Region	Area Acquired	UNITS ESTABLISHED					
			Farms		Subsistence Farms		Squatters' Settlements	
			Number	Size or Range in Size	Number	Size or Range in Size	Number	Size of plot
Lafayette	Sugar cane	(cuerdas) ^a		(cuerdas)		(cuerdas)		(cuerdas)
		10,040.96	387	3-139	507	1	—	—
Castañer	Coffee	1,645.04	1	1395.04 ^b	200	1	—	—
Zalduondo	Pasture & sugar cane	1,526.88	141	5-11	122	1	1	1/4
American Suppliers	Tobacco	4,322.27	466	4-20	—	—	211	1/4
Marini	Coffee	255.51	—	—	113	1-3	—	—
Barrancón-Vieques	Sugar cane & pasture	431.20	—	—	199	2	—	—
St. Just	Sub-urban	435.67	—	—	347	1	—	—
Dominguito-Arecibo	Sugar cane	94.21	—	—	61	1-4	—	—
Livingston-Doradoc	Fruit & sugar cane	43.37	—	—	20	2	—	—
Coffee, tobacco & fruit programs	Coffee tobacco fruits	25,480.51	—	—	8,457	2-3	—	—
TOTAL		44,275.62	995	—	10,026	—	212	—

^a Cf., footnote 3 for explanation of use of *cuerdas* interchangeably with *acres*.

^b Operated directly by the Puerto Rico Reconstruction Administration.

^c Donation.

farms established by the Puerto Rico Reconstruction Administration on the lands purchased from the American suppliers in the tobacco region, and covering farms ranging in size from 4 to 10 cuerdas, showed that these farms were not self-sustaining. Without the income from work off the farm furnished them by the Puerto Rico Reconstruction Administration, the income of the resettlers would have been insufficient to maintain their families even at the low levels prevalent in that area among wage earners.¹² The individual sugar cane farms established by the Puerto Rico Reconstruction Administration on the lands reacquired from the land cooperatives have not yet been studied.

Dwellings resistant to hurricanes have been built by the Puerto Rico Reconstruction Administration on 5,866 of the total number of 11,115 rural units created, including farms and subsistence farms.¹³ This has meant a considerable improvement in the housing conditions of the resident families. The enjoyment of these better houses has been secured in some cases at the expense of a decline in the monetary income available for other family needs. In the case of the Puerto Rico Reconstruction Administration's one-cuerda subsistence farms established in the Lafayette area, for example, it was found that the increase in the incomes of these families from the production of food crops was not large enough to offset the outlay for rent, or for amortization and interest, to pay for the concrete houses which were built for them. The Lafayette Investigating Committee recommended

the correction of burdensome rentals which it termed a principal shortcoming of the project. In Puerto Rico the great majority of agricultural laborers residing in the rural area do not pay rent since they usually live in houses built by themselves on somebody else's land, or in houses provided gratis by the landowners. In many cases, the landowners let the laborers plant a small area of land in food crops for home use.

An adequate appraisal of the accomplishments of the PRRA land reform projects cannot be made now since the essential studies of many aspects of the program, especially those regarding small farms and subsistence plots, have not yet been made.

The Farm Security Administration. Another federal agency that has undertaken land reform in the Island is the Farm Security Administration. Their Tenant Purchase Program, now called the Farm Ownership Program, was started in Puerto Rico in March, 1938. From that date to June 30, 1943 there had been established 491 small farms, totaling 17,764 cuerdas. Some of its most important projects are located in the sugar cane area on land purchased from sugar mills and related interests. From the owners of the San José Sugar Mill 4,143 cuerdas were purchased and divided up into 129 sugar cane farms. The Monserrate Sugar Cane Mill sold 2,287 cuerdas, providing land for 70 farms. In an interior sugar-cane-producing area 1,733 cuerdas were acquired from the La Plata Sugar Company. Forty-eight farms were created on these lands. The Farm Security Administration has also established 65 small farms on 1,986 cuerdas formerly belonging to Central Victoria, Inc.¹⁴

¹² Daniel A. Haddock, *A Study of 96 PRRA Small Farms in Cayey, Cidra and Aibonito*, University of Puerto Rico Agr. Exp. Sta. Bulletin 63, June, 1942 (in Spanish with English summary).

¹³ Includes the 259 employees' houses on the Lafayette mill lands.

¹⁴ Official figures of the Farm Security Administration.

In the case of the La Plata Sugar Company the sale of these lands to the Farm Security Administration borrowers was made with the consent of the Supreme Court of Puerto Rico since this corporation had been proceeded against for violation of the 500-acre law.

The Farm Security Administration does not purchase land directly. The Farm Security personnel appraises the land and divides it into conveniently-sized farms. The farm must be adequate to support a family on a fairly decent plane of living and provide for repayment, amortized over a period of 40 years at an interest rate of 3 per cent on the unpaid principal. The Farm Security then selects persons to whom it makes loans for the acquisition of the land, for building a home, and for buying equipment and stock. The borrowers operate their farms under a farm-and-home management plan prepared with the help of the Rural Rehabilitation supervisors of the FSA.

The Farm Security has been very successful in its Farm Ownership Program in Puerto Rico. Not a single purchaser has been dispossessed and delinquency in payments is negligible. This performance shows that the size of farm has been adequate for a decent plane of living and for the amortization of the debt incurred. A large measure of the success can be attributed to the fact that the FSA, besides providing adequately-sized farms, makes credit available for building a home, and provides production credit at low rates as well as close supervision and an educational program. The successful operation of the sugar cane farms established in the lands formerly belonging to Central San José and ranging in size from 22.2 to 69.5 cuerdas has been very significant. One of the difficult problems that have to be solved in executing a land reform in the

sugar cane industry is the assurance of a regular supply of cane to the mill. Central San José does not grow cane now. During the two harvesting seasons of 1941 and 1942 the small farms established on the lands bought from the San José interests have been able to maintain a steady supply of sugar cane to the mill. This has proved that a large number of small farms, when properly supervised and co-ordinated, can maintain a stable flow of sugar cane to the mill.

Land Reform in the 1940 Elections

In the electoral campaign of 1940 a new party, formed in 1938 and known as the Popular Democratic party, made its appearance. It carried out an extensive campaign throughout the entire rural and urban areas of the Island, pledging its legislators, in the event of a victory, to pass immediately a number of fundamental economic reform laws. These proposed laws were explained in principle to the electorate. The Popular party's provocative battle cry was "Pan, Tierra y Libertad" (Bread, Land and Liberty).

The Land Law was one of the most important of the proposed reform acts. The main commitments of this law as presented to the electorate were: the enforcement of the 500-acre law through the acquisition of the land illegally held upon payment of just compensation to the owners; the establishment of what were called proportional profit farms, a form of farm organization designed to combine individual management with profit-sharing features; and the division of farms into small plots to provide land to squatter families. The final decision of the United States Supreme Court of May 25, 1940, definitely determining the illegality of corporate land holdings in excess of 500

acres, came during the period when the principles of the Land Law of Puerto Rico were being drafted and publicly discussed. The Land Law of Puerto Rico, as conceived by the Popular party leaders and presented to the electorate, provided for the creation of an instrument to carry out the effective enforcement of the 500-acre limitation.

In the 1940 elections the Popular party obtained a majority of one vote in the Senate of Puerto Rico, and, with the help of some representatives of other parties, established control of the majority in the lower house. Upon the attainment of legislative power, the Popular legislators proceeded to pass those fundamental reform laws which they had pledged themselves to enact. One of the first to be drafted and passed was the Land Law of Puerto Rico. The bill became law upon the signature of Guy W. Swope—then Governor of Puerto Rico—on April 12, 1941. The records show that in the senate the law received the votes of 10 Popular and 3 Socialist senators. There was one vote against it and the remaining 5 senators either abstained from voting or were absent. In the house the law received the votes of the 17 Popular representatives present, 3 votes from the "Unificación Tripartita" party and one Socialist vote. The other 18 members either abstained from voting or were absent.

The Tugwell Committee

On December 12, 1940 (after the victory of the Popular party in the 1940 elections and the United States Supreme Court's decision on the 500-acre limitation) Harold L. Ickes, Secretary of the Interior, appointed a committee under the chairmanship of Rexford G. Tugwell to investigate the administrative responsi-

bilities under the 500-acre provisions of the Organic Act. The committee did preliminary work in Washington; held hearings in Puerto Rico, drafted a number of considerations, returned to the Island to hold additional hearings, and reached a set of conclusions, the most important of which are as follows:

"The present system has failed to democratize industrial processes; it results in an ever narrower participation in management and income.

"The ends to be sought are these: satisfaction of the home-hunger now so generally frustrated; participation in the yield of the land by the largest possible number of those who labor on the land; compensation for those whose interests under the present system are affected by the establishment of the new system; preservation of the Island's sugar economy which might well be lost if the cost of production should be unduly increased.

"For practical attainment of these values, there should be: (A) Effective legal procedure to break up all holdings of more than 500 acres, whether by corporations, by 'artificial' persons or by individuals¹⁵ who are now affected by neither Federal nor Insular limitation. (B) The appointment by the Insular Supreme Court of receivers with authority to operate the properties until arrangements for their valuation and eventual transfer can be affected. (C) Establishment of a Land Authority [already provided for by the Insular Law now in litigation¹⁶] with power to acquire and to dispose of land and to borrow money on its security. (D) Expansion of the functions on the Island of the various Federal agencies, so that they may finance and furnish education and health services for families employed on, or who may acquire, lands from the Authority. (E) Assurance of uninterrupted supply of

¹⁵ R. Menéndez Ramos, one of the members of the committee, would not extend the Law's operation to individuals. (Insular leaders never agreed with the extension. The Land Law does not extend to individuals.)

¹⁶ A case which was brought before the Federal Court of the Puerto Rico District and quickly dismissed.

necessary cane for efficient mill operations throughout the grinding season; to this end, growers might authorize the Land Authority, or other appropriate agency, to make contracts on their behalf with the mills. Or some form of public utility status might be devised which would impose regulation on all parties to these contracts."

In regard to the land and management, the report recommended:

"The land and management pattern largely dictates the human associations to be established. The most generally acceptable pattern would be individual family type farms on which the families would have the security of tenure traditionally associated with ownership, an opportunity to achieve independence, and a decent standard of living. However, many—if not most—of the farm laborers on the lands in question now lack the technical and managerial skill required for successful operation of individual units, and for the coordination of such operations necessary to obtain the benefits of present day technology. For this reason, and to avoid disruption of the sugar industry, subdivision of present large-scale holdings should proceed cautiously. If lands are acquired by the Land Authority before subdivision is practicable, consideration should be given to the efficiency of going managements. The present staffs should, wherever possible, be retained; their knowledge and competence have brought the sugar industry to a high technological level, and this ought not to be impaired. They could be utilized either directly by the Land Authority or as lessees of proportionate profit farms provided for under the Land Authority Law. However, lessees of such farms should not be permitted or required to operate on the basis of speculative profits, should not be allowed to become owners of more than 100 acres and should not be selected or retained on a political basis. In all this, individual family type farms, with their operations effectively coordinated, should be kept constantly in mind as the most generally desired goal whether owned or leased, provided the social interests in conservation, etc., are guarded.

"The suggested procedure is for gradual acquisition of estates over a period of years

with a definitely spaced program so that all involved may know what to expect and so that transition may be as smooth as possible."

Land Law of Puerto Rico

The legislative measure representing the culmination of the long attempts of *The People of Puerto Rico* to achieve land reform is the Land Law of Puerto Rico. In drafting the Act, considerable use was made of the experience in the field of land reform of the Insular Homestead Commission, the Puerto Rico Reconstruction Administration, the Farm Security Administration Farm Ownership Program, and of the recommendations of the Tugwell Committee. Directly or indirectly the ideas and contributions of a large number of persons—practical farmers, lawyers, economists, and sociologists—were considered in the formulation of its principles. But the greatest contribution was that of Luis Muñoz Marín, president of the Popular Democratic party, who gave the law its basic orientation, philosophy and concepts.

The purposes of the Law, as stated in it, are:

"The Authority is created for the purpose of carrying out the agricultural policy of The People of Puerto Rico as determined in this Act, and to take the necessary action to put an end to the existing corporative latifundia in this Island, block its reappearance in the future, insure to individuals the conservation of their land, assist in the creation of new landowners, facilitate the utilization of land for the best public benefit under efficient and economic production plans; provide the means for the 'agregados' (squatters) and slum dwellers to acquire parcels of land on which to build their homes, and to take all action leading to the most scientific, economic and efficient enjoyment of land by the People of Puerto Rico."

The Land Law creates a board in the Department of Agriculture designated as the Land Authority of Puerto Rico and composed of the commissioner of agriculture as chairman, the commissioner of labor, the commissioner of the interior, and four citizens who "profess belief in the wisdom and urgency of this Act." These four members are appointed for four years by the governor of Puerto Rico, by and with the advice and consent of the senate. The governor has power to appoint, with the advice and consent of the senate, the executive officer of the Authority, known as the executive director, for a term of four years. The board is intended as the policy-making body of the Authority. It has all the usual powers of such government agencies.

Specifically, the Land Authority is directed to terminate the operation of land in large estates by corporations or other "artificial" entities. To attain that end the Authority was given the power of condemnation (eminent domain) against corporations and "artificial" persons. It was also granted power to buy the land (held in excess of 500 acres) at sales which the "receivers" appointed by the courts may carry on as a result of legal proceedings designed to enforce federal and insular limitations on the operation of land by corporations and "artificial" persons. In these cases the receiver must begin to sell the land within a period not longer than six months after the court's decision. When the Land Authority wants to buy such land it will be given preference provided that it offers a price equal to that of the highest bidder. This privilege will last five years and can be extended for one more year.

Individual Farms. On the lands acquired, the Authority is authorized to establish individual holdings of not less than

5 nor more than 25 acres of land.¹⁷ The Authority is empowered to fix the conditions of sale of individual farms, except that the repayment period cannot be more than 40 years, nor can the rate of interest be higher than 5 per cent nor lower than $\frac{1}{2}$ of 1 per cent above the rate of interest fixed for the bonds issued by the Authority on the lands in question.

Regulations promulgated by the Authority decree that applicants eligible for the acquisition of individual farms must not be less than 21 nor more than 50 years of age; must have at least 5 years of practical farming experience unless they are professional agronomists; must be landless or own insufficient land to maintain their families. Public employees are not eligible unless they agree to resign their positions upon obtaining a farm. Persons whose financial positions are such that they can finance the purchase of a farm through usual methods are not eligible. No initial payment is required.

Proportional Profit Farms. The Authority is also empowered to set up what are termed in the law "proportional profit farms." To this end the Authority can lease from 100 to 500 acres of land—or more when necessary for higher productive efficiency—to farmers, agronomists and other persons with experience in agricultural management. It is provided that the conditions of the lease will be fixed by a contract between the Authority and the lessee.

The concept of the proportional profit farm as developed in the Land Law of Puerto Rico constitutes a new and interesting idea in the field of land tenure. It arose from a situation in which lands are

¹⁷ As amended by Law No. 157 approved May 14, 1943. Originally, the size limits were "not less than 10 nor more than 100 acres." This amendment is unfortunate; it reduces the required flexibility in regard to the size of individual farms.

relatively scarce and the number of landless agricultural workers who should be benefited from the proceeds of the land are very numerous. It was estimated by the Tugwell Committee that there were about 175,000 acres of land subject to distribution under the 500-acre law. There are at least 175,000 landless agricultural workers. Furthermore, the large estates on the level fertile lands operate very efficiently and cultivate intensively under an advanced technology. The subdivision of these lands, efficiently cultivated and with the use of expensive irrigation systems, was of doubtful wisdom from the standpoint of productive efficiency. The problem was to maintain efficient production and good management and at the same time to diffuse the earnings among a large number of workers. The answer was the proportional profit farm which combines the characteristics of individual management and profit sharing. The inducement for efficient management lies in the fixed percentage of net profit that belongs to the manager-lessee. The laborers participate in whatever profits are made on the basis of the number of days worked and the wages received.

It is interesting to note that there was a parallel preoccupation and a fundamental agreement between the insular leaders who drafted the Land Law of Puerto Rico and the Tugwell Committee as to the desirability of some form of tenure that would combine efficiency with wider distribution of profits. The following quotations from Governor Tugwell's report to the Secretary of the Interior, dated December, 1941, show this common aim clearly:

"It seemed to me, therefore, in formulating a preliminary hypothesis that there was at least 40 per cent of land formerly used for the cash crop and presumably flat

and fertile which would be available for other purposes. Why not use this 40 per cent to satisfy the clamoring hunger for land ownership and preserve the other 60 per cent for some sort of large scale operations under public auspices—not necessarily government ownership, but certainly not individual holdings. My thought turned to the way in which we had set up certain plantation operations in the Mississippi Delta country, in Arizona, and in California, under the Old Resettlement Administration which had now become the Farm Security Administration.

"The program to which he was committed [Luis Muñoz Marín, who had won control of the Senate] was a definite one whose prominent features were: (a) the setting up of a land authority to receive lands alienated under the five-hundred-acre limitation; (b) the financing of this transfer by bond issues with land as security; (c) the establishment of small homesteads; and, (d) the setting up of proportionate participation farms.

"These Insular proposals, on investigation, seemed to differ only in detail from the hypothesis which had been shaping up in my mind. I was doubtful whether an insular land authority of this sort could finance itself on the necessary scale; and I thought it probably would be guided by a theoretical orthodox pattern of agriculture; but it seemed possible that this program could be brought together in some way with the Federal one, the two supplementing each other and providing an effective attack."

The law prescribes, however, the most important conditions for the operation of these farms. The lessee is not individually responsible for the payment of the rent or for the crop production credit requirements of the leased farm but he is responsible for the property placed under his care and must be bonded. He is obligated to cede three acres of land to each one of the families of laborers living on the farm or to laborers regularly engaged on it for their use. It is stipulated that this cession shall be in a proportion of not less than one family for every 20 acres, although this may be waived for farms

where the efficiency in the use of the land may make it impracticable. For their work on a proportional profit farm (not on 3-acre parcels) the laborers will receive the prevailing wages of the region, or the wages fixed by law, as an advance. At a specified time of the year it is provided that they shall receive a part of the profits in proportion to the days worked and the wages received. This provision applies to all workers, those having parcels and those not having them. The laborers residing on the farm are free to work on it or not. The lessee must reside on the farm.

From 5 to 15 per cent of the net profits, according to the terms of the contract, is the compensation of the lessee. The Authority may advance to the lessee, chargeable against his profits, the sums that it may deem advisable. When the lessee is provided with animals and equipment by the Authority, their cost is added to the rentals of the farm. The lessee is required to keep accounts according to the method fixed by the Authority and by the auditor for Puerto Rico with the approval of the governor. The rentals of the lessee are to be paid annually at a fixed date. It is stipulated that they shall be fixed at not less than an amount sufficient to amortize the cost of the farm plus interest in 40 years, or in relation to the terms of the bonds issued by the Authority.

The law requires that the lessee of a proportional profit farm have 5 years' practical farm experience in the type of agriculture to which the farm is to be devoted, or at least 3 years' experience in the case of a professional agronomist.

Both laborers and lessee will participate in the net income. How to compute the net income is carefully stated in the law. The following deductions from the gross receipts must be made: (a) the rent pay-

able on the farm; (b) taxes; (c) wages or salaries received by way of advance to the laborers; (d) the expenses for materials and operations, depreciation on major improvements, and cost of minor improvements made with the Authority's approval; (e) debt and interest on any production loan; (f) premiums on crop insurance; (g) workmen's compensation insurance premiums; (h) up to 3 per cent of the gross receipts for supervision and auditing expenses; (i) up to one per cent of the gross receipts for expenses of cooperative education; and (j) the cost of the use of machinery, animals and agricultural implements and equipment that may be provided by the Authority. A reserve fund to be determined by the Authority shall be created out of net profits.

The Authority is specifically instructed by law to draft rules and regulations in order that the management of the farm may be as nearly as possible the same as that of private farms.

Land for Squatters. Another significant provision of the Land Law authorizes the establishment of small $\frac{1}{4}$ - to 3-cuerda plots under Title V of the Act.¹⁸ The purpose of this Title is that every "agregado" (squatter) on the Island shall be entitled to hold at least $\frac{1}{4}$ of a cuerda of land on which he may permanently erect his home. To realize this purpose the Land Authority is directed to search out the most suitable places for these squatter settlements, purchase such places from their owners, and divide them into parcels of not less than $\frac{1}{4}$ of a cuerda or not more than 3 cuerdas to be distributed among the "agregado" families. The Authority is empowered to cede free of charge $\frac{1}{4}$ of a cuerda to any "agregado" family, but the "agre-

¹⁸ The law was amended in the regular session of the legislature in 1943 increasing the upper limit in the size of these plots from 1 to 3 cuerdas.

gado" may acquire a larger plot by paying for the additional land in yearly installments of not more than \$3.00. Money collected from this source is to be deposited in a fund to be used exclusively for public improvement in the particular settlement involved. An amendment to the Law passed in 1942 empowered the Authority to provide construction materials to homeless "agregados" up to the value of \$150. These loans must be repaid in yearly installments of not more than \$3.00 and the proceeds therefrom are to be placed in a fund for the construction of additional houses for squatters.

All individual farms, parcels, proportional profit farms, or lands leased or ceded to agricultural cooperatives (as permitted under an amendment to the Law) are protected from forced sale for the payment of debts—except for debts to the Authority or to any other insular or federal agency, or for taxes. These properties cannot be mortgaged and no transfer, lease or sale is valid except to an eligible person and with the permission of the Authority.

Financing. The total direct appropriations of the Legislature of Puerto Rico to the Land Authority for the recovery of land held in large estates aggregate \$3,400,000. In addition, \$1,900,000 have been appropriated to carry out the provisions regarding small parcels for landless squatters. These appropriations are held as special funds for the Land Authority by the treasurer of Puerto Rico.

The Law provides other ways by which the Authority may raise funds. The treasurer of Puerto Rico is ordered to issue, upon the request of the Land Authority, \$5,000,000 of bonds of *The People of Puerto Rico*. A tax of 0.10 of 1 per cent on all real property on the Island is levied to create the sinking fund for the payment

of these bonds. The Land Authority is empowered to issue bonds of its own up to 75 per cent of the purchase price of acquired lands. These bonds cannot be issued for maturities of more than 40 years or at rates of interest higher than 5 per cent. A reserve fund of \$500,000 from the proceeds of the sales of bonds of *The People of Puerto Rico* is established as an additional guarantee for these issues. An amortization fund for Land Authority bonds is established in which will be entered all moneys received or collected from the sale, the installments, or the rentals of lands pledged as collateral for the issuance of bonds.

The Land Authority

Organization and Expenses. The first Executive Director of the Land Authority, Carlos E. Chardón,¹⁹ was appointed on October 10, 1941, and the first meeting of the Land Authority Board was held on October 19, 1941. The statement showing the amounts appropriated for the fiscal year 1942-43 for the various divisions of the Land Authority gives a picture of the administrative organization and authorized expenditures:

<i>Land Authority Division</i>	<i>Appropriation</i>
Office of the Executive Director ..	\$ 19,440
Office of the Secretary of the	
Authority	4,600
Appraisal Division	45,520

¹⁹ At present the executive director of the Land Authority is José Acosta Velarde, sugar technician. The present members of the Land Authority board are: Fernando Villamil, Commissioner of Agriculture, soil chemist and appraiser; Sergio Cuevas, Commissioner of the Interior and civil engineer; Manuel A. Pérez, Commissioner of Labor, statistician and social scientist; Rafael Menéndez Ramos, agricultural chemist and former sugar mill manager; Ramón Colón Torres, agricultural economist; José Cesteros Guardiola, practical sugar cane farmer; and Ralph Will, regional director of the Farm Security Administration.

Legal Division	17,883
Planning Division	12,800
Title V (squatters' plots) Section	14,700
Land Adjudication Committee	4,800
Finance Division	11,100
Total by Divisions	130,843
General Expenses	37,300

TOTAL AUTHORIZED EXPENSES \$168,143

Accomplishments. Up to June 30, 1943 the Land Authority had devoted most of its time to the establishment of small plots for landless squatters under Title V of the Act. For this purpose the Authority had purchased farms aggregating 7,213 cuerdas, of which 3,542 cuerdas are now in the process of being divided and distributed. The remaining 3,671 cuerdas have already been distributed. As of June 30, 1943 a total of 4,199 plots had been established; 1,534 with $\frac{1}{4}$ of a cuerda each, 318 with $\frac{1}{2}$ of a cuerda each, and 2,347 with 1 cuerda each.²⁰

Most of the farms acquired for squatter settlements have been medium-sized farms, purchased from various types of operators, individual farmers, partnerships, and corporations. These farms have been selected on the basis of their suitability for squatter settlements, taking into consideration principally their nearness to sources of work, roads, schools, hospitals, and trading centers, and their suitability for food production. On June 30, 1943, there was an unobligated balance of \$1,142,000 in the fund for squatter settlements.

Under the program designed to redeem the lands held in farms in excess of 500 acres, the Land Authority has purchased 9,500 cuerdas of land belonging to Central Cambalache. The Authority has been taking possession of these lands gradually as harvesting operations have been finished by the previous owners. The pro-

cess has now been completed and the deed of transfer of the lands to the Land Authority was signed on August 13, 1943.

Central Cambalache was one of the defendant corporations which had been proceeded against before the Supreme Court of Puerto Rico early in 1936 for holding lands in excess of 500 acres. This corporation expressed the desire to enter into voluntary agreement with the Land Authority for the disposal of its lands. The agreement was in the form of a "consent decree" approved by the Supreme Court of Puerto Rico under which the corporation pledged itself to the sale of its excess lands to the Land Authority. The Authority paid \$1,355,000 for the 9,500 acres purchased, the price set by negotiation between appraisers for both parties. The present plan for the use of these lands is as follows:

<i>Use</i>	<i>Cuerdas</i>
For proportional profit farms	5,370
For individual small farms	850
For squatter settlements	1,530
For forest reserve	750
To be ceded to other government agencies, or undetermined	1,000
TOTAL	9,500

Other defendant corporations have already signed "consent decrees" with the Land Authority. The most important of these corporations is Russell and Company, an affiliate of the South Puerto Rico Sugar Company, Inc., operators of the largest sugar mill in Puerto Rico, known as "Guánica Central." Russell and Company owns approximately 24,000 cuerdas. The Fajardo Sugar Growers' Association and the Loiza Sugar Company—i.e., the agricultural corporations belonging to the Fajardo Sugar Company, one of the "big four" (mostly American-controlled sugar corporations)—are negotiating a "consent decree" with the Land Authority.

²⁰Official figures of the Puerto Rico Land Authority.

TABLE II. AREA PURCHASED AND FARMS ESTABLISHED: BY NUMBER, RANGE IN SIZE AND IN CAPITAL INVESTMENT; ALL FARMS AND BY PROJECTS ON LANDS FORMERLY BELONGING TO SUGAR COMPANIES OR ALLIED INTERESTS. FARM SECURITY ADMINISTRATION IN PUERTO RICO, JUNE 30, 1943
(In Cuerdas)

PROJECT	Area Purchased	Farms Established		
		Number	Range in Size	Range in Capital Investment
	(cuerdas)		(cuerdas)	(dollars)
All farms	17,763.87	491	17.4-142.0	1660-9136
San José	4,143.15	129	22.2- 69.5	2217-6845
Monserrate	2,286.92	70	17.4-131.0	2526-5363
La Plata	1,732.65	48	20.6- 68.5	1893-7671
Victoria	1,985.81	65	21.6- 58.9	4969-9136

The Fajardo group owns around 23,800 cuerdas of land. Another smaller corporation, the "Compania Azucarera del Toa," owner of 6,865 cuerdas, has just signed an agreement. In all, to June 30, 1943, three corporations have agreed or are negotiating to sell their holdings in excess of 500 acres to the Land Authority. In addition, Rubert Hermanos, Inc., owner of 12,188 cuerdas, is under receivership

by order of the Insular Supreme Court.

On June 30, 1943, the unobligated balance of the Land Authority fund for the purchase of land held by large estates was \$1,482,000. This sum is insufficient to buy the land from the corporations which have already entered into "consent decrees." It is apparent that, because of financial limitations, the Land Authority is committed to cautious, slow operations.

TABLE III. LAND AREA ACQUIRED FOR DISTRIBUTION BY PUBLIC AGENCIES AND ONE PRIVATE PROJECT IN PUERTO RICO, JUNE 30, 1943

AGENCY	Government	Year Established	Area Acquired for Distribution
Homestead Commission	Insular	1921	24,059.00
Puerto Rico Reconstruction Administration	Federal	1935	44,275.62
Farm Security Administration	Federal	1938	17,763.87
Land Authority	Insular	1941	16,726.20
Sub-total (public agencies)	—		102,824.69
Private project	—	1939	5,466.00
TOTAL			108,290.69

Problems Ahead

It is still too early to attempt an appraisal of the work of the Land Authority but it is only realistic to point out that the road ahead is neither easy nor safe. Many possible mistakes must be avoided if this worthwhile experiment is to really succeed.

The successful operation of proportional profit farms will be the crucial test of the adequacy of the present Land Law and of the Land Authority. This is still the uncharted section of the road to full achievement. The proportional profit farm is an ingenious tenure form that deserves a trial under the most auspicious conditions. Its success will solve the problem of combining the efficiency of large-scale farming operations in sugar cane cultivation with the desired diffusion of the profits among the large group of landless agricultural laborers who work the land.

It must be made clear, however, that the proportional profit farm, as created by law, may run into serious difficulties. Compensation to the manager-lessee will depend on the realization of a net profit. In sugar cane cultivation, as in any other economic pursuit, losses are to be expected in certain years. Lessees of proportional profit farms will probably not remain on the farms as operators when confronted with a profitless year. A good manager will be able to forecast a loss long before the end of the harvesting season. In the writer's judgment, this constitutes one of the most serious problems. But, of course, there are other difficulties that will have to be solved also, as for example: (a) the achievement of a sound financial set-up as to capitalization, indebtedness and amortization; (b) the maintenance of labor relations that will result in labor costs no higher than on private farms; and (c) the

development of an adequate yet not expensive supervisory organization capable of controlling expenditures and rigidly auditing the lessees' books. Above all, it will be necessary to select efficient and reliable lessees to manage these farms efficiently.

The establishment of squatter settlements and the creation of individual self-sustaining farms should not offer serious difficulties. The principles essential to the successful operation of such programs are well known to a number of professional agronomists and economists in the Island, and there is considerable practical experience in these fields. This, however, does not mean that even in these programs success is assured. Political considerations must not overrule the known, sound principles of successful operation. A watchful eye must be kept on the expenditures of the Authority lest excessive administrative costs discredit the agency in the eyes of the public and the legislators. One cannot overemphasize the importance of efficient and enthusiastic personnel without which the wisest of plans cannot be executed.

The program of squatter settlements has great social implications. It tends to group into rural villages the now widely-scattered rural population of the Island. Such a clustering of the population may greatly simplify the problems of rendering it such essential social services as education, medical care, pure water, etc. On the other hand, unless the location of settlements is wisely planned, especially in relation to the sources of labor, many settlements will be partially abandoned. For these reasons a conscientious planning project for the location of these settlements, preferably on an island-wide scale, is immediately required. The Puerto Rico Planning Board has begun the prelimi-

nary studies on which such a plan must be based.

It has been unfortunate that the initiation of the Land Authority coincided with the nation's entrance into the war. The price of the land purchased bears an intimate relation to the future success of the operations of the individual and proportional profit farms created from it. It is hard to keep appraisal values down to the reasonable or "normal" levels under the present conditions of relative inflation. The war has also increased essential overhead expenses for inspection trips, appraisals, etc. The demands of the armed forces, coupled with those of emergency and other social agencies recently established in Puerto Rico, have made the problem of personnel even more difficult.

The Land Authority, especially in its program for the liberation of lands held in corporate farms of over 500 acres, is committed to cautious and slow operations. It must be so because of financial limitations and because of the complexities and difficulties inherent in the task. With the realization of this fact, however, there is also a strong determination to carry on this land reform program which has been desired for so long. One of the most hopeful aspects of this picture is the sincere enthusiasm and faith of the Land Authority's personnel. The latest reports of financiers who have inspected the six newly-established proportional profit farms on the Cambalache lands are very encouraging.

Summary

To date, land reform in Puerto Rico has affected a perceptible but not considerable area of farm land. The activities of all public land reform agencies, plus one privately sponsored project, have resulted

in the acquisition for distribution or in the supervised redistribution of about 108,000 cuerdas (Table III). This area constitutes 5.7 per cent of the total area in farms reported by the 1940 Census. Of large sugar estates belonging to sugar companies or related interests, 35,000 cuerdas have been included in the land reform program. This constitutes 8.8 per cent of the estimated 400,000 cuerdas operated by sugar companies and related interests in 1934-35 before the programs affecting these landholders were started.

Land reform commenced in Puerto Rico very modestly in 1921 with the establishment of the Insular Homestead Commission. That agency purchased farms usually from private persons, in most cases located in interior areas of medium and low productivity, divided them into small farms and assigned them to agricultural laborers either on a rental basis or on the basis of gradual acquisition through the amortization of the value of the farm. The Homestead Commission established 2,074 farms aggregating a total of 24,000 cuerdas.

The setting up of the Puerto Rico Reconstruction Administration by the federal government in 1935 gave a great impetus to the land reform movement in the Island. To June 30, 1943, that agency had created 995 farms and 10,026 subsistence farms, redistributing a total area amounting to over 44,000 cuerdas.

In 1938 the Farm Ownership Program, known as the Tenant Purchase Program, of the Farm Security Administration was extended to the Island. From then to the present that agency has created 491 farms, each capable of sustaining a family at a satisfactory level of living. The land area involved aggregates 17,800 cuerdas.

At long last in 1941 the Insular Legislature enacted a forceful piece of legisla-

TABLE IV. AREA ACQUIRED FOR SMALL FARMS THROUGH PUBLIC AGENCIES AND ONE PRIVATELY FINANCED PROJECT FROM SUGAR COMPANIES OR ALLIED INTERESTS, BY PROJECTS. PUERTO RICO

PROJECT	Year Established	Executing (or Sponsoring) Agency	Area Acquired (cuerdas)
Lafayette	1936	Puerto Rico Reconstruction Administration	10,040.96
Los Caños	1939	Private bank	5,466.00
San José	1940-41	Farm Security Administration	4,143.15
Monserrate	1941-42	Farm Security Administration	2,286.92
La Plata	1941-42	Farm Security Administration	1,732.65
Victoria	1942-43	Farm Security Administration	1,985.81
Cambalache	1943	Land Authority of Puerto Rico	9,513.20
TOTAL			35,168.69

tion which created a public instrumental-
ity to carry out the long-desired enforce-
ment and implementation of the prohibi-
tion on corporations to operate land in
excess of 500 acres imposed by the Con-
gress of the United States. The enforce-
ment of that limitation, which had existed
and had been ignored and openly violated
since 1900, became the principal aim of
land reform in the Island.

On lands acquired from the violators
of the tenure limitation or from other
sources, the Land Law authorizes the cre-
ation of small farms from 5 to 25 cuerdas in
size and proportional profit farms. The
right of all landless workers with families
to a piece of land from $\frac{1}{4}$ to 3 cuerdas in
size is proclaimed and to that end the Au-
thority is empowered to create squatters'
settlements. To date, the Land Authority
has acquired from various landowners

7,200 cuerdas for squatters' settlements.
It has purchased 9,500 cuerdas formerly
belonging to a corporation found guilty of
violating the 500-acre land holding limi-
tation. The Land Authority had con-
cluded, to June 30, 1942, the creation and
assignment of 4,199 squatters' plots rang-
ing in size from $\frac{1}{4}$ to one acre. It is also
organizing six proportional profit farms
on the best lands purchased from the sugar
corporations. The biggest problem
confronting the Land Authority is the
successful operation of proportional profit
farms, a form of tenure having the char-
acteristics of individual management and
profit-sharing and designed to harmonize
the need for efficient operation of fertile
level lands by large-scale farming and a
more equitable distribution of the net
profits among the laborers working on
those farms.

A Pattern of Successful Property Tax Administration: The Wisconsin Experience - III. Local Assessment and Its Results

By HAROLD M. GROVES* and A. BRISTOL GOODMAN**

Introduction

In two previous articles¹ the system of state control of property tax administration in Wisconsin has been considered. The phases of property tax administration discussed therein constitute the state's main claim to distinction in this field. These are the silver linings in the assessment cloud. This article will deal with the cloud itself—as represented by the local assessor, the board of review and the local assessment product. The latter, of course, is influenced by state supervision and equalization and thus is also a part of the silver lining.

Development of Local Assessment

Limitations of space forbid the presentation here of more than the most generalized account of the development of local assessment institutions.² During a considerable part of the nineteenth century the state relied mainly on self-assessment in the listing of property and values for the property tax roll. This subjective source of information was not supported by objective evidence, as is true in large

degree of the modern income tax. Rather, the supports took the form of long and numerous oaths, possible action for perjury, penalties, and, to a certain extent, the doomage power. For example, the law of 1849 provided that assessors were obliged to accept lists of properties made and sworn to by owners in case of personal property, and verified by a freeholder in the case of real estate.³ The assessor, apparently, was a collector of lists and an administrator of oaths. The law of 1868 provided that, if the taxpayer refused to furnish desired information or if the assessor believed the taxpayer had more property than was actually revealed, the assessor might estimate the total holdings of the latter and such information would be legal until full information was disclosed (doomage power).⁴

Although the subjective element in the assessment process was very much reduced as time went on, the Wisconsin assessment system continued to work ineffectively. Evidence was abundant that wide inequality in assessments and wholesale evasion were the rule.⁵ As in other states, the assessment of intangibles was particularly troublesome and the state narrowly escaped an experience with tax "ferrets," an institution employed in other states under which the reporting of personal property was farmed out, usually to professional tax inquisitors. The Milwau-

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¹ This *Journal*, May, 1943, pp. 141-152, and August, 1943, pp. 300-315.

² For a full account, see R. V. Phelan, *Financial History of Wisconsin*, University of Wisconsin Bulletin 193, Economic and Political Science Series, Madison, 1906.

³ Wisconsin Revised Statutes, 1849, Chap. 15.

⁴ Laws of Wisconsin, 1868, Chap. 130.

⁵ See Phelan, *op. cit.*, pp. 318-346.

ke City Council in 1911 employed an Indiana firm to list property on a commission basis. Challenged in the courts as to its authority, the council took the issue to the legislature. While the tax-ferret issue in Milwaukee was settled by the adoption of the income tax law and the exemption of money and credits from property taxation, it did create the bitterness with which it has usually been associated. The ethics of tax collection, it was said, should at least have the support of administration by public officials bound by oath to follow the law.⁶

With the coming of the state tax commission at the turn of the century, important new adaptations in the assessment process developed rapidly. The load of the property tax administrator was lightened considerably by the exemption of intangibles and other forms of personal property difficult to assess. Whether or not these changes, along with the inauguration of the income and gasoline taxes, were at the expense of equity—as has been claimed—they certainly did operate to make the property tax more tolerable from the administrative standpoint. Steadily improving techniques of supervision and equalization added their very important contribution to administrative feasibility. The judicial powers of the tax commission, particularly reassessment, also helped. All of these innovations served to remove some of the feeling that the property tax as an administrative undertaking was a hopeless task.

However, the impression persisted that assessments would never be first-rate until they rested on a better foundation. Literally hundreds of recommendations were

made for changes in assessment organization. These suggestions ranged all the way from slight modification to complete revolution of the assessment process. One of the strongest statements recommending revolutionary changes was made by the tax commission in 1918:

"The most serious defect in our tax system is the method of selecting the assessment force. . . . The only qualification required is the ability to get the necessary votes. While good assessors are often chosen in this way, it is in spite of the system rather than because of it. The normal result is a miscellaneous aggregation of untrained and ill-paid assessors of varying degrees of indifference and incompetence. A uniform assessment from this source would be little less than a miracle and the age of miracles is gone.

"The complete remedy for this situation undoubtedly would be a force of assessors appointed by the tax commission or other state agency under civil service rules, working under the direction of and subject to removal by the appointing power. All administrators and students of taxation agree in this view.⁷

Resistance of the legislature to this and other similar suggestions was traditionally persistent. In 1918 Professor Lutz expressed the view that "it is useless now to talk of abandoning the principle of local assessment in Wisconsin,"⁸ and instead placed his faith in the supervisors of assessment and the improvement of their work. The tax commission itself, after 1925, followed the line recommended by Lutz. Writing in 1933, one of the present authors presented an optimistic view of this situation, as follows:

"It has been urged at various times in this and other states that the assessment process should be centralized in the hands of a state assessor or the tax commission. Wisconsin

⁶ Wisconsin Manufacturers' Association, *Wisconsin Should Not Introduce Non-Resident Tax Ferrets*, pamphlet addressed to the members of the Wisconsin Legislature, 1911.

⁷ Wisconsin Tax Commission, *Report*, 1918, pp. 14.

⁸ H. L. Lutz, *The State Tax Commission* (Cambridge: Harvard University Press, 1918), p. 277.

has achieved a fine balance between central control through supervisors chosen under the civil service and local assessors responsible and responsive to their electorates. This avoids the popular hostility and distrust which so often arises when the control is imposed from above and outside the local community.

"Much has been written in support of the proposition that the politically-chosen, part-time local assessor is to blame for the bad administration of the property tax; that it is too much to expect a good assessment as long as he is permitted to make it, and that as soon as he is replaced by a full-time civil servant with a larger territory all will be well. Experience in Wisconsin seems to show that even a politically-chosen, part-time assessor can do good work if given the opportunity, and it seems more than probable that the changes in assessment machinery which have been commonly recommended would prove no panacea. There is plenty of bad property tax administration in Wisconsin. . . . But there is also a large amount of very creditable work done—especially considering what the state has been willing to pay for it. It is not necessary to wait for a revolution in the machinery of assessment in order to improve the quality of property tax administration."⁹

Notwithstanding the above expression of opinion (which is still entertained by the authors), local assessment machinery in Wisconsin does have many limitations. Fortunately, most of them could be removed within the present framework of intergovernmental relations. Some attention will now be given to the nature of local assessment machinery with suggestions for its improvement.

Local Assessment

The Assessor. Assessment of real and personal property is extremely decentralized in Wisconsin. Of the 1,786 assess-

ment districts in the state in 1939, 1,279 were towns (the Wisconsin equivalent of townships in other mid-western states), 362 were incorporated villages, and 145 were incorporated cities. All except 26 of the assessors in these primary assessment districts were elected to office. With the exception of appointed assessors and the assessors in Milwaukee and Dane County, the terms of all these officials were for only one year.¹⁰

In 1939 it was found that the usual town or village assessor had 6 or 7 years of assessing experience. Experience of city assessors, especially in the larger cities, was somewhat longer. Approximately 13 per cent of town and 17.9 per cent of village assessors had had no previous assessing experience. Median age of town assessors was 49, of city assessors 61, and of village assessors 58 years. However, the figures on averages for cities concealed significant variations. Cities large enough to employ full-time assessors generally had younger men filling these positions. Municipalities with part-time assessors—particularly the smaller cities and villages—frequently had much older assessors.

Salaries of assessors, with few exceptions, tended to vary roughly with the size of the assessment district, the higher salaries being paid in the larger districts and the lower ones in the smaller assessment districts. This was true in cities as well as in towns and villages. Village assessors received an annual average salary of \$92, as compared with \$185 for town assessors. The difference was caused mainly by the fact that the village assessing season was about one-half that of

⁹H. M. Groves, *Property Tax Institutions in Wisconsin*, National Tax Association Bulletin, December, 1933, p. 77.

¹⁰This and subsequent information concerning Wisconsin assessors is based on a field study of 185 city, 95 village, and 275 town assessors made by the authors in 1939.

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towns. Using the sample study as a basis for the estimate, it appears that the 1,279 town assessors in the state are paid approximately one-quarter of a million dollars each year.

Concerning the matter of pay for assessors, one of the supervisors made the following remarks:

"We desire to call your particular attention to the salary you have been paying your assessor, and ask you to compare it with that paid by other districts in the county. We believe it to be false economy to pay an assessor such a small sum that he is forced to neglect the job of assessing and resort to copying the roll. When districts realize that they get only the kind of job they pay for, they will agree that of all officials, the assessor is usually paid the least. His is, by far, the most important and the most thankless task in the entire field of government. . . . Don't be misled into letting out the job to the lowest bidder. He is often the most expensive man that you can hire."¹¹

The position of assessor in Wisconsin involves no special statutory qualifications. As in most other states, not a word is said concerning training, ability, intelligence, or other qualifications. Eligibility requirements for office have to do only with state and federal citizenship, and residence in the district. Ability to get, not to do, the job appears to be the prime requisite.

In 1941 the city of New London, with a population of 4,825, adopted an ordinance requiring that the assessor be appointed on a merit system basis. The ordinance provided for the establishment of an examining committee consisting of three persons. Two of the members were to be assessors from two other Wisconsin cities and the third was to be a member of the New London city council. This com-

mittee was required to make an examination of candidates for the office of assessor and to certify the three highest names to the mayor. From this list the mayor was authorized to appoint an assessor for an indefinite term subject to the confirmation of the common council. A similar innovation was inaugurated in Reedsburg. These innovations may mark the beginning of a new attack on the problem of assessing personnel.

As a part of a field survey (1939) of assessment personnel, each supervisor of assessments was asked to give his opinion of the quality of urban assessment personnel in his district (Table I). These men could not be expected, of course, to have exactly the same scale of rating. Nevertheless, they were all competent judges and well acquainted with the men rated. The supervisor was asked to rate the assessor on the basis of his cooperation, his ability to do a good job, the quality of his assessment, the adequacy of his records, his knowledge of property values, and so on.

Most significant of the information thus gathered is that the incompetent assessors were limited to cities of the fourth class, that is, cities under 10,000 population; also, all the incompetent assessors were part-time assessors. Only two of the first-, second-, and third-class cities had assessors rated as poor, while 33 of the 125 assessors of fourth-class cities (those with part-time assessors) received this rating. Likewise, more than a third of the full-time assessors were rated excellent; whereas, less than 5 per cent of the assessors of fourth-class cities were given this rating.

The statutes provide an elaborate procedure for the removal of assessors in the circuit court but there are few cases where assessors have been removed from office

¹¹ Aldro Jenks, "Assessors' News Letter," *National Association of Assessing Officers*, December, 1939, p. 92.

for official misconduct, malfeasance in office, or neglect of duty. According to the Tax Commission, in Wisconsin "the removal of the assessor by the circuit judge, provided by law, has been found to be unworkable."¹²

The infrequent use of the removal power apparently is not restricted to Wisconsin. For example, in Texas the operation of the removal process has been described as follows:

"There is hardly an assessor in the state (Texas) who is not guilty of a violation of the letter and intent of the law; yet none are ousted, although they may fail to list much of the property in the city. It is far more probable that a man would be ousted for misappropriating \$10 of the taxes collected than for failure to place a million dollars' worth of property on the assessment rolls."¹³

The field study of local assessment administration conducted by the present authors also shed considerable light on the collateral occupations of part-time asse-

sors. As expected, almost all the town assessors indicated that their major occupation was farming. Even though there is often considerable residential property in a town, its government is usually controlled by farmers.

More provocative of speculation was the information secured on the collateral occupation of urban assessors (Table II). A very broad range of human activities is covered. The city assessor may be your janitor, painter, plumber, or grocer. Quite possibly he may be the real estate agent who has been dogging your footsteps, or perhaps the insurance agent in whose face you slammed the door yesterday. He may be your carpenter, your tailor, your shoe clerk, your photographer; and if you go out evenings, he may be your tavern keeper, your movie theater manager, or he may sell those slot machines on which you consistently lose money. And when you are gone, he may take charge of your funeral, sell your relatives a monument to remember you by, and cut the grass over your grave. All these occupations and many more were represented by assessors in Wisconsin cities in 1939.

¹² Wisconsin Tax Commission, *Manual for Supervisors of Assessments*, 1931, p. 18.

¹³ M. G. Toepel, *The Assessment of Property for Ad Valorem Tax Purposes in Texas Cities* (Austin, Texas: University of Texas, Bureau of Research in the Social Sciences, 1939), p. 66.

TABLE I. EFFICIENCY OF 135 WISCONSIN URBAN ASSESSORS AS RATED BY SUPERVISORS OF ASSESSMENT, 1939

SIZE OF MUNICIPALITY	Total No. Assessors	Number of Assessors with Rating of:				
		Excellent	Good	Fair	Poor	Incompetent
Over 150,000	1	1	—	—	—	—
39,000-150,000	8 ^a	3	3	2	—	—
10,000-39,000	18	5	7	4	2	—
5,000-10,000	23 ^b	3	3	8	7	2
2,000-5,000	49	1	10	21	13	4
Under 2,000	53	2	19	17	13	2
Villages over 1,000	32 ^a	9	12	9	2	—
Total Municipalities	184 ^c	24	54	61	37	8

^a Kenosha has 2 assessors.

^b Antigo and Menasha have 2 assessors each.

^c One not reported.

TABLE II. OCCUPATIONS OF WISCONSIN RURAL AND URBAN ASSESSORS, 1939*

Villages (over 1,000) and Fourth-Class Cities (under 2,000)	Fourth-Class Cities (2,000-10,000)
9 real estate and/or insurance agents	1 clerk
9 laborers	1 water system supt.
5 carpenters	1 railway engineer
3 printers	1 painter
2 mechanics	1 secretary
2 salesmen	1 civil engineer
1 bowling alley operator	1 grocer
11 retired farmers	1 plumber
1 theater manager	1 janitor
1 blacksmith	1 stone-mason
1 building contractor	1 retired auditor
1 paving-block cutter	1 retired laborer
1 chemist	1 retired railway worker
1 tailor	1 retired railway worker
1 photographer	1 retired lumberman
1 paper trimmer	1 retired field man
1 merchant	1 relief client
1 undertaker	1 unemployed
1 business man	2 "retired"
1 watch repairman	3 "none"
	7 not given
	8 assessors
	7 real estate and/or insurance agents
	5 salesmen
	4 carpenters
	2 accountants
	2 garagemen
	2 janitors
	2 painters
	2 retired merchants
	1 retired teacher
	1 retired farmer
	1 retired funeral director
	1 retired banker
	1 retired newspaper man
	1 retired merchant
	1 retired butcher
	1 retired manufacturer
	1 cemetery sexton
	1 bookkeeper
	1 plasterer
	1 park caretaker
	1 service station operator
	1 building contractor
	1 veterinarian
	1 produce man
	1 tavern keeper
	1 cattle buyer
	1 printer
	1 shoe clerk
	1 cement contractor
	1 abstracter
	1 timber cruiser
	1 jeweller
	1 lumbermill worker
	1 unemployed
	1 "heavy drinker"
	1 "retired"
	1 "none"
	6 not given

* First-, second- and third-class cities (population over 10,000) had full-time assessors.

In the second place, the collateral occupations of part-time urban assessors indicate that a large number of them—especially those in the smaller cities and villages—have retired from active life and apparently have taken on assessing as something to keep them busy in their spare time. Nearly one-fourth of the assessors in cities under 2,000 population have retired from active life except during the annual assessment season. Probably this factor alone largely accounts for the difference in ages of urban, as compared with town, assessors.

In the third place, when the occupations of these urban assessors are compared with those of town assessors in the light of the property to be assessed by both, it is clear that the urban assessor is much less likely to be acquainted personally with the types of property he must assess than is the town assessor. In this

respect, the city assessor has the much more difficult task. Most difficult of all is the task of the supervisor who is expected to be acquainted with all types of property. The manual for supervisors of assessments sounded a warning on this matter in its observation that no one is in a more "humiliating position than the supervisor of assessments who doesn't know buckwheat from barley, Poland Chinas from Percherons. There is nothing which will undermine more quickly the confidence which the assessor must have in the supervisor than to have him reveal his ignorance of any one of the great and varied field of articles which compose the personal property of the towns, villages, and cities of the district in which he works."¹⁴

As previously suggested, much could be done to improve the local assessment

¹⁴ Wisconsin Tax Commission, *Manual for Supervisors of Assessments*, 1931, p. 22.

without radical changes. Terms of office could be lengthened to at least two years and, preferably, to four years. Assessors could be more adequately compensated. More city assessors could be chosen by appointment. Assessment of real estate once every two years would probably be preferable to the present annual assessment and this does not contradict the fact that assessment should be a continuous process. If there is to be an assessment season, it should be longer—at least in many places. As to the smallness of assessment jurisdictions, there are some possibilities of consolidating poorer and smaller towns; the population requirement for the incorporation of villages could be raised; and some experimentation with the joint performance of the assessment function with other districts might be tried. Establishment of consolidated municipal offices in the smaller cities and villages can also be encouraged. If local government is to hold its own in the post-war era, it will need new vigor and fresh thinking.

The Board of Review

Completion of the assessment roll by the town, village or city assessor is not always the final proceeding in the determination of the assessments of individual parcels of real and personal property. The taxpayer may protest his assessments. Due process of law requires that every taxpayer be given the right to a hearing before the tax becomes fixed irrevocably. In Wisconsin this function is performed by the local board of review, by the department of taxation, and by the courts. Only the first of these agencies will be considered here.

The terms "review" and "equalization" are used interchangeably by many writers

in the field of taxation. Doubtlessly, one reason for the lack of clarification of these terms arises from the fact that in some parts of the United States the two powers are vested in the same body. To add further to the confusion, these bodies are frequently called "boards of review and equalization."

In Wisconsin, however, the review function is quite distinct. Each Wisconsin county is divided into town, village and city assessment districts; and each of these has its own board of review. The function of changing individual assessments is performed by that body. Strictly speaking, Wisconsin does not provide for the change of the assessments of all property, or of certain classes of property, by percentage increases or decreases (defined as equalization and often referred to as involving *en masse* changes). The same objective, however, is accomplished in a somewhat different manner.¹⁵ It is sufficient to say here that normally the last changes in individual assessments are made by the town, village or city board of review. Centrally-levied taxes are equalized by a process which affects only the tax rate.

Local review is performed mainly by *ex officio* boards composed of various officers of each town, village or city. In each taxation district one member must be (according to statute) either the mayor, the village president, or the town chairman; in all cases, the clerk of the respective taxation district also is a member. In towns, other members of the board of review are the two town supervisors (sometimes referred to as the "side" supervisors). In cities and villages there must be at least one other officer on the board, but there is no limit to the size of the board

¹⁵ See second article in series, this *Journal*, August, 1943, pp. 300-315.

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except with respect to the number of municipal officers.¹⁶ Other members of city and village boards of review consist of such officer or officers *other than the assessor* as their governing boards shall determine by ordinance.

Until 1941 there was only one exception to the above. In the City of Milwaukee there were five members on the board of review, none of whom occupied public office or was publicly employed. Members were appointed by the mayor with the approval of the common council and held office for five years. The 1941 legislature authorized all second-, third-, and fourth-class cities to follow the Milwaukee plan.¹⁷

Field study indicates that there is substantial variation in both the size and the functioning of the boards of review (some of it not authorized by statute), the mandatory character of which is not entirely clear. The *mean* and the *median* (urban board) were composed of three members; but the range (in one-third of the cities studied) was from three to nine—mayor, clerk, and seven aldermen in Manitowoc. In spite of the fact that the attorney general had ruled that officials could not be paid more than three dollars a day for services to the board, some cities paid \$4 and \$5. In two-thirds of the cities studied, members of the governing council were represented on the board. In 4 cities, assessors were members of the board; in 3, county supervisors; in 4, city treasurer or comptroller; in 4, city attorney; and engineer and municipal judge in one each.

The legal board of review in Wisconsin is a quasi-judicial body and not an assessing agency. Its duties include the correction of errors in the descriptions of property, the assessing of omitted property,

and the receiving and adjudication of complaints of taxpayers. Changes in assessments are limited to individual properties; the board has no power to make *en masse* changes. The most important limitations imposed on the board are that: (1) changes in individual assessments can be made only upon oral sworn testimony committed to writing by the clerk of the board; (2) individual assessments can be *increased* by the board only on condition that notice is served on the taxpayer in time for him to appear before the board; (3) individual assessments can be increased only upon proper evidence, the original assessment being considered presumptive evidence of the full value of the property; and (4) the board cannot disregard unimpeached evidence which shows that the assessor's figures are incorrect. The courts will not interfere with the action of the board where sufficient evidence to sustain the board's judgment has been recorded and no substantial injustice was caused by the failure of the board to comply with the exact letter of the law. Wisconsin courts do not now substitute their judgment of values for either that of the assessor or that of the board of review.

If local boards of review were more careful in following the letter—as well as the spirit—of the law, assessment procedure would be strengthened considerably; less necessary interference by the courts would be required; and the assessor's position would be measurably improved. Field study also revealed that boards of review have a considerable number of administrative problems. In the first place, boards of review generally have inadequate knowledge of property values. One village clerk remarked, "If somebody can cry and complain enough, his valuation is reduced or not raised enough."

¹⁶ Wisconsin Statutes, 1941, 70.46 (1).

¹⁷ Laws of Wisconsin, 1941, Chap. 92.

In the second place, board members were notoriously ignorant not only of the proper procedure for conducting boards of review but also of the nature of the review function. Many members reported that swearing of complaining witnesses was not necessary and therefore was not required in their districts. Others held that their powers were fully as extensive as that of the assessors and that their judgment might be substituted for that of the assessor. Still others indicated that their particular district customarily adjusted property values on an *en masse* basis. One town clerk summarized the situation as follows:

"The greatest handicap with the board of review is the average layman's professed contempt for 'red tape' and the failure of the board to realize it is a court and not a town board. The greatest source of trouble is the feeling that the board is a super-assessor and that it has power to change the assessor's figures automatically."

The recording of testimony by the clerk was often found to be entirely inadequate and, in many cases, non-existent.

In the third place, there was a noticeable tendency for the board of review to "play politics." Because of their *ex officio* elective status, boards of review were prone to make changes with one eye on the election of the following year. Coupled with this tendency was a "lack of disposition to alienate themselves from personal friendships."

In the fourth place, the board of review—especially the one in smaller taxation districts—was reluctant to require oral, sworn testimony before making changes in assessments. Board members hesitated to place neighbors on the stand and to swear them in as witnesses. Taxpayers, too, did not like the idea of swearing to testimony. As one clerk expressed

it, "witnesses do not want to swear to testimony but still insist on changes, just the same." In the larger cities the more impersonal character of the board minimized this problem.

Finally, the time available for completing the review of local assessments was not always adequate. Almost without exception the protested assessments were those for which the property owner believed his assessment was too high, not too low. Where particular properties appeared to be under-assessed, the board could subpoena witnesses to testify on the assessment. If it then decided the assessment ought to be raised, it was required to notify the property owner in time for him to appear before the reviewing agency. This took time and, unless the assessments were greatly out of line, the board members (especially in towns) were prone to let the assessments pass so they could get back to their farm work.

Considerable complaint was raised by city and village clerks against the assessor's serving on the board of review. The report of one city clerk summarizes this complaint in the following words:

"Our conditions will be much better when the assessor is replaced by the city attorney on the board. As our set-up has been, with the assessor as a member, the board of review is always at a disadvantage because the property was assessed by the assessor and naturally he is sure his assessment is just and so when a complaint comes in, there is always one vote for the assessment as shown on the assessment rolls. Therefore, we figure by having the assessor present at the meeting, yet having no vote on the matter, adjustments can be made by three members who are fully divorced from the original assessment."

Turning now to recommendations with regard to the board of review, it appears probable that these boards are too large

in many cities and villages. A board of three seems to be quite sufficient. Because of the necessity of maintaining adequate, permanent records to take care of cases where the decisions of the board are appealed, the clerk of the town, village or city should be a member. There is also an important advantage in extending membership to the city attorney or, in villages, to some village officer who is acquainted with legal procedure. Because of the strict legal procedure required of the board by the Wisconsin courts and because the board acts in a quasi-judicial capacity, one member at least should be familiar with the more common rules of evidence and should be able to cross-examine witnesses. The city engineer would also be valuable on the board and, if he is included, the city attorney might be required to attend all sessions of the board and to do the cross-examining without being a member. If the board is to be made of more than three, a representative from the city council and from the city's representation on the county board would be advisable. This would serve the function of maintaining contact between the interested legislative bodies and the administration of the principal local revenue source. There are fairly obvious and quite cogent reasons why the assessor should not be a member.

Consideration might well be given to the Milwaukee plan of a board of review which consists of five residents of the city, none of whom occupies any public office or is publicly employed. This plan, now available to all cities, gets away from the disadvantages of the *ex officio* board previously discussed. Members can be selected and appointed for their knowledge of property values rather than for their sense of political values. There seems to be no good reason why the plan could not

also be made available to villages and even to towns eventually.

It is argued that although the board of review should not act as an assessor, it should have the power to do so, a power that would be used conservatively and only to correct an obviously bad assessment. On the other hand, it is important not to divide the responsibility for the original assessment. Probably the present power in Wisconsin—that of summoning witnesses, taking testimony, and making such changes in the assessment roll as the evidence warrants—is adequate.

There should be two, and only two, levels of review. At the present time, appeals from property values determined by the board of review can be made either by application to the department of taxation for revaluation of specific items of property or by an appeal to the courts. It would be more sound procedure to require that appeals must be either to the department of taxation or to the board of tax appeals before recourse is had to the courts. By the provision of somewhat more formal hearings before a competent state agency, due process of law could be assured to taxpayers. The present stringent requirements on local board-of-review procedure, such as the detailed recording of all testimony and evidence, could then be relaxed considerably.

In conclusion, it may be stated that the board of review is a typical case of a very high degree of local autonomy. It is also a case of considerable neglect by those interested in efficient property tax administration. This situation has afforded experimentation but it has also produced considerable inefficient performance and the defeat of legitimate rights. The Wisconsin board does have the great merit that it leaves the responsibility for local assessment largely undivided. But even

without changing long-established laws and tradition, improvement is attainable and long over-due.

*Results of Local Assessment:
The Product*

Attention is now turned to an analysis of the effectiveness of property tax administration in terms of the end-product.¹⁸ Unusual methods of central assessment in Wisconsin add considerably to the difficulties of testing the quality of local assessments. As was shown in the preceding article of this series,¹⁹ part of the inequalities are evident in assessments and part in tax rates. Statistical measures (designed to test assessment inequalities in states which equalize centrally-levied taxes by mass changes in local assessments) are not applicable to states which equalize centrally-levied tax rates by varying them. In other words, with perfect equalization only inequalities within—and not between—assessment districts are important in Wisconsin. It would be incorrect, as well as misleading, to obtain sample data from several taxation districts in a county and then to calculate one assessment ratio and a measure of deviation for the county. To do so would be to disregard entirely the system of equalization and central assessment under which differences in average local assessment ratios are compensated for in the allocation of the county and the state property tax levies.²⁰

¹⁸ Because approximately nine-tenths of the general property tax base consists of real estate, and because of the limited resources of the authors, the qualitative study of local assessments was restricted to real estate.

¹⁹ This *Journal*, May, 1943, pp. 141-152.

²⁰ The unusual method of equalization was taken into account by making a great number of ratio and deviation studies, each confined to parcels located in one taxation district. These were aggregated by the preparation of an unweighted arithmetic

Ratio of Assessment to Full Value. Results of the sample study of assessments of 7,569 parcels of real estate located in 279 taxation districts indicate that Wisconsin assessors as a whole are only slightly undershooting the statutory standard of full value assessments. For all property covered by the study, the average assessment ratio was 92.4 per cent on a number basis and 88.3 per cent on a value basis.²¹ Differences in the two ratios

mean of each index used. In the district studies it was feasible to weight assessment ratios by value and this procedure does have some advantages. But, in the main, no such weighting was used. Assessments might be compared with *sales* or with *appraisals*. Because of the scarcity of usable sales and the (at least) equal dependability of supervisors' appraisals, both usable sales and appraisals were used. Sample studies were made of at least one class of property in 43 cities (30 per cent of the incorporated cities), 61 villages (17 per cent of incorporated villages), and 175 towns (14 per cent of the towns). A wide geographical spread of districts was secured.

In brief, individual assessment ratios were calculated for each parcel of property. These ratios were then averaged for each parcel group to obtain an average assessment ratio on a number basis, and deviations of each parcel ratio from the average assessment ratio were totaled and divided by the number of parcels in the group. The resulting average deviation was then converted to a coefficient of dispersion. And finally, average assessment ratios were also calculated on a value basis in an attempt to detect regressivity in assessments. From then on, the problem was one of aggregating and calculating averages representative of assessment conditions in towns, villages and cities. These were obtained by calculating unweighted arithmetical averages of each index used.

An average deviation in one district cannot be compared readily with that of another until both have been converted to comparable bases. This conversion is accomplished by dividing the average deviation by the average assessment ratio from which it was measured. The resultant is termed the coefficient of dispersion. For a more detailed account of the statistical techniques employed in this study, see: A. Bristol Goodman, *Assessment Administration in Wisconsin*, Doctoral Dissertation, University of Wisconsin, 1942 (unpublished).

²¹ With a ratio calculated on a number basis, each property studied carries a weight of one; when calculated on a value basis, each dollar of property carries a value of one.

indicate regression in assessments, as will be shown later.

Assessments in towns were nearest to full value while those in villages were about half-way between the average ratio of towns and the somewhat lower ratio of cities. This difference was the same

ratios were classified according to the type of real estate included in each sample study. The classification used was the same as required of Wisconsin assessors and included both land and improvements. Resulting average assessment ratios by classes of property were as follows:

<i>Classes of Property</i>	<i>Number basis</i>	<i>Value basis</i>
(A) Residential (90 taxation districts)	87.2%	84.1%
(B) Mercantile (34 taxation districts)	83.9	81.3
(C) Manufacturing (3 taxation districts)	61.4	51.0
(D) Agricultural (61 taxation districts)	91.0	89.6
(E) Swamp, Cut-over, Waste (8 taxation districts)	118.5	118.7
Unclassified D, E, and F, Timber (76 taxation districts)	101.3	94.4

whether measured on a number or a value basis. Average assessment ratios were as follows:

	<i>Number Basis</i>	<i>Value Basis</i>
175 towns	95.9%	91.6%
61 villages	89.0	86.5
43 cities	82.9	78.2
TOTAL	92.4%	88.3%

However, these figures conceal very wide differences in assessment levels from one taxation district to another. The lowest ratio of assessment was 44.8 per cent for a town in Waukesha County while the highest was 247.6 per cent for a town in Clark County. The range in average assessment ratios was not nearly so large for villages and cities. The range of 60 to 130 per cent covered all but 5 of the villages and cities and all but 14 of the towns. The figures do not in themselves indicate any inequity in assessments but they do establish the necessity of an effective equalization (proper apportionment of county and state taxes).²²

In order to shed more light on differences in average assessment ratios, these

As was expected, the lowest assessment ratio was for manufacturing property. Although the sample of this class of property was too small to reflect assessment conditions of manufacturing property generally, the results obtained confirmed observations of other students as to the under-assessment of manufacturing property. The migratory character of this form of wealth, the propensity of many municipalities to extend inducements to industry, and the intimidation of assessors by the great size of factories and their values account mainly for this well-known tendency. The data on swamp, cut-over and waste land (again a small sample) also confirm a general impression. The explanation in this case involves absentee ownership, a lag in adjustment from high values, and other factors.

Inequalities in Individual Assessment. The crux of the problem of assessment for the individual property owner is the degree to which his property is assessed according to the standards of the assessment district in which the property is located. Average assessment ratios are important in judging assessment conditions, yet they cannot reveal existing inequalities in individual assessments. The average deviation of assessments is designed

²² Only summary information concerning this and some other phases of the study can be presented here. For a fuller presentation, see Goodman, *op. cit.*

to provide this information and it indicates the average degree to which individual assessment ratios vary from the average assessment ratio of the taxation district. The coefficient of dispersion, derived from the average deviation of assessments, permits comparison of this index among districts.

Results of the sample study of inequalities in unequalized²³ individual assessments as measured by the coefficient of dispersion indicate that Wisconsin assessors generally are none too accurate. Assessors for the state as a whole failed to hit within the 10 per cent "zone of tolerance" allowed assessors by students of the problem. Exceptions in the case of individual assessors were all too few. The average coefficient of dispersion for 279 taxation districts was 16.1 per cent. By classes of taxation districts, it was as follows: 175 towns, 15.8%; 61 villages, 15.3%; and 43 cities, 18.2%.

Differences in the above coefficients of dispersion are of little significance. Although the coefficient of dispersion is slightly higher for cities than for towns and villages, that difference more than disappears when the three cities with the highest coefficients of dispersion are eliminated from consideration. When adjusted in this manner, the revised coefficient of dispersion for cities is 14.0 per cent.

Results of the study of inequalities in individual assessments by towns, villages and cities is summarized in Table III. On the one hand, coefficients of dispersion in 94 taxation districts ($\frac{1}{3}$ of the taxation districts studied) were within 10 per cent of the full value standard of assessment. Towns dominated this group, there being 71 towns within the 10 per cent zone. On

²³ Unequalized because equalization in Wisconsin is reflected only by varying centrally-levied tax rates, not by changing individual assessments.

the other hand, there were a total of 33 taxation districts in which the coefficient of dispersion was from 25 to 70 per cent. Again, towns dominated this group but, judged by the size of the sample, the same proportion of each type of taxation district was in this high group. The low coefficients of the towns offset the high ones with the result that the average for all towns was no higher than that for all taxation districts. In other words, although a larger proportion of towns and villages were assessed within the zone of tolerance, the greatest variation was among towns (followed by villages). The net result was a smaller average coefficient than in cities.

Dominance of agricultural property in towns undoubtedly accounts for the comparatively lower average coefficient of variation in these units. On the other hand, the location of manufacturing property in cities tends to lift the average coefficient of variation of cities above that of towns and villages.

Before condemning the results of assessment administration too unconditionally, the reader should bear in mind two factors. The first is that in the measurement of assessment deviations the norm itself is not an absolute but is based on human judgment and subject to some degree of error. This is true whether assessments are compared with appraisals or with sales. Two of the most competent judges of value that could be obtained anywhere would not agree by a considerable margin on individual valuations. There is no absolute truth with which assessments can be compared.

The second factor is that the coefficients of dispersion found here compare quite favorably with those found in other states. Studies in other states cannot be reviewed in detail here but it can be observed that a coefficient of 20 per cent is relatively

TABLE III. SUMMARY: AVERAGE COEFFICIENTS OF DISPERSION (NUMBER BASIS) OF 279 WISCONSIN TOWNS, VILLAGES AND CITIES, 1939

COEFFICIENT OF DISPERSION (per cent)	Number of Taxation Districts			
	Towns	Villages	Cities	Total
0- 5	11	6	—	17
5-10	60	12	5	77
10-15	38	11	13	62
15-20	34	18	11	63
20-25	13	6	8	27
25-30	1	6	3	10
30-35	1	1	2	4
35-40	2	1	—	3
40-45	4	—	—	4
45-50	3	—	—	3
50-55	4	—	1	5
55-60	1	—	—	1
60-65	1	—	—	1
65-70	2	—	—	2
TOTAL	175	61	43	279
<i>Average coefficient of dispersion</i>	15.8%	15.3%	18.2%	16.1%

very low. In 1927 the coefficient of dispersion in Illinois was 51.6 per cent.²⁴

Regression in Assessments. Two tests were made in the present study to determine whether parcels of real estate of small value were assessed at a higher level than those of large value. The opinion is widely held that property tax assessment procedures result in regressive assessments.

The first test consisted of comparing

the average assessment ratio of each taxation district on a value basis with the same ratio calculated on a number basis. Whenever the value mean is less than the number mean for any parcel group, this fact is reliable evidence that assessments are regressive. This is true because a valuable property will affect the average more in the case of a ratio based on value than one in which each parcel of property is given equal weight regardless of value. For purposes of this study, where the two types of ratios coincided the assessment was considered neither progressive nor regressive. But if the value mean fell below the number mean, the assessment was earmarked as being regressive. On the other hand, if the value mean exceeded the number mean the assessment was classified as being progressive.

Results of this comparison are summarized in Table IV. Regressive assessments were found to be characteristic of almost two-thirds of the towns, villages and cities studied. As among units of

²⁴ See Herbert D. Simpson, *The Tax Situation in Illinois*, Studies in Public Finance of the Institute for Research in Land Economics and Public Utilities, Research Monograph No. 1, 1929; R. W. Nelson and G. W. Mitchell, *Assessment of Real Estate in Iowa and Other Midwestern States*, State University of Iowa, College of Commerce, Bureau of Business Research, Iowa Studies in Business No. 10, Jan., 1931; G. B. Clarke and O. B. Jesness, *A Study of Taxation in Minnesota with Particular Reference to Assessment of Farm Lands*, Minnesota Agricultural Experiment Station, Bul. 277, Aug., 1931; R. Wayne Newton and W. O. Hedrick, *Farm Real Estate Practices in Michigan*, Michigan Agricultural Experiment Station, Special Bul. 172, Feb., 1928; Joseph D. Silverherz, *Assessment of Real Property in the United States*, Special Report No. 10, New York State Tax Commission, Albany, 1936.

TABLE IV. PROGRESSIVITY AND REGRESSIVITY IN WISCONSIN REAL ESTATE ASSESSMENTS AS REVEALED BY COMPARISON OF AVERAGE ASSESSMENT RATIOS ON NUMBER AND VALUE BASIS, 1939.

ITEM	Progressive		Regressive		Neutral	
	Number Taxation Districts	Per Cent Progres- sive	Number Taxation Districts	Per Cent Regres- sive	Number Taxation Districts	Per Cent Neutral
<i>By Units of Government:</i>						
Cities	15	34.8	28	65.2	0	0.0
Towns	67	37.2	110	61.1	3	1.7
Villages	16	26.2	42	68.9	3	4.9
TOTAL	98	34.5	180	63.4	6	2.1
<i>By Classes of Property:</i>						
A—Residential	24	27.0	62	69.7	3	3.3
B—Mercantile	14	41.2	20	53.8	0	0.0
C—Manufacturing	1	33.3	2	66.6	0	0.0
D—Agricultural	26	42.6	35	57.4	0	0.0
E—Swamp, Cutover, Waste	5	45.5	5	45.5	1	9.0
D, E, F—Timber	22	28.6	52	67.5	3	3.9

government, the assessments of towns were found *least* often regressive while those in villages were found so *most* often. Although regressivity predominated by about two to one, the fact that about one-third of the parcel groups examined showed progressivity indicates that property tax assessments in Wisconsin were considerably less onerous for the "little fellow" than in many other states.²⁵

Because the first test could indicate nothing more than the presence of regression, a second test was made in an attempt to determine how much regression was present and of what value class it was most characteristic. The previous method of comparing taxation district averages was abandoned and appraisal-assessment ratios for parcels of real estate were classified according to value amounts and by type of taxation district. To facilitate comparisons between various classes of assessment, calculations were made to

convert the sample data to a 100 per cent basis. Regression of 2 per cent in the case of an average assessment ratio of 10 per cent is obviously more significant than a regression of 2 per cent with a 100 per cent assessment.

Results of the regression study by value classes of property are summarized in Table V. Assessments are most steeply regressive for properties valued under \$1,000 and over \$25,000. In between these limits real estate is relatively under-assessed but there is no pronounced tendency for the average assessment ratio to continue to decline as the value of property increases. As a matter of fact, assessment ratios were found to continue declining at a rate of only 1 per cent above the \$1,000 and up to the \$4,000 class. Above this latter level, ratios increase slightly up to \$25,000. The small sample of properties valued over \$25,000 were relatively under-assessed to about the same extent as properties valued from \$500 to \$1000 were over-assessed.

²⁵ See the excellent compilations by Silverherz, *op. cit.*

When the data were examined by types of taxation districts, some interesting contrasts were revealed. In cities the spread between highest and lowest assessment ratios was greatest. Furthermore, there was a steady decline in assessment ratios throughout the sample except for properties valued from \$5,000 to \$10,000. Instead of ratios declining throughout the value classes, a much less pronounced decline up to \$4,000 was followed by a noticeable rise in ratios up to \$10,000. In the case of villages, the relatively over-assessed property classes were those valued under \$1,000 and from \$7,500 to \$10,000. Also, property valued under \$500 in the case of villages was much less over-assessed than in cities. In the 80 towns studied, regression was much more rapid but the decline in assessment ratios reached a maximum almost immediately after leaving the value classes of less than \$1,000. Property valued from \$1,000 to \$4,000 was favorably treated in the towns; all other property was assessed at a higher ratio.

Uniform Assessment and Full Assessment. An attempt was also made to determine whether there was any relationship between the tendency of an assessor to assess parcels at a uniform standard of value and his tendency to maintain the standard of assessment at or close to full value. To test this statistically, the coefficient of correlation between the average coefficient of deviation for each county and the Wisconsin Department of Taxation's ratio of assessed to true value for all real property in the county was computed. If such a relationship were to exist, one would expect a very high negative coefficient of correlation, which would mean that as assessors tended to assess property more nearly in conformity with full value, they would also tend to assess

the property in the district more uniformly. The correlation coefficient thus computed was .2390. The statistical test for significance indicates that sampling errors alone could account for so large a correlation. The indication is that the deviations about the standard adopted by the assessor cannot be explained by his success or failure in attaining full value assessments.

In summary, the administrative problems concerning Wisconsin assessment procedure include inequalities in individual assessments, excessive differences in average assessments from one taxation district to another, and some regression and favoritism in assessments. Considering the limitations of attempts to measure assessment deviations, the necessary imperfection of human institutions, and the results in other states the product can be pronounced "good but not good enough." It shows plenty of room for improvement and the need for constant guarding of hard-won ground gained slowly over more than forty years of uphill battle.

Contribution of Wisconsin

An attempt has been made in these three articles to describe and analyze Wisconsin's experience in property tax assessment administration. The unique contribution of the state lies in a vigorous and workable program of state assessment supervision and equalization. The result has been much improvement in the quality of assessment. Effort is still needed, however, both to improve the existing product and to preserve the gains of a long period of advancement.

Contrary to some views, equalization and supervision proved to be complementary factors, each contributing to the sup-

TABLE V. SUMMARY: RATIO OF ASSESSED TO APPRAISED VALUE OF REAL ESTATE IN SELECTED WISCONSIN TAXATION DISTRICTS, 1939, BY VALUE CLASSES OF PROPERTY
Weighted by number of properties

CLASS OF PROPERTY ACCORDING TO APPRAISED VALUE	Property in 80 Towns			Property in 25 Villages			Property in 15 Cities			Total Property		
	Properties	Ratio of Assessment	Properties	Properties	Ratio of Assessment	Properties	Properties	Ratio of Assessment	Properties	Properties	Ratio of Assessment	
\$ 0-\$ 499	299	119	63	106	94	127	456	119	455	111	119	111
499- 999	225	113	93	108	137	109	727	96	727	96	96	96
1,000- 1,999	289	92	186	100	252	99	603	95	603	95	95	95
2,000- 2,999	248	90	105	99	250	98	466	93	466	93	93	93
3,000- 3,999	193	92	64	94	209	94	302	94	302	94	94	94
4,000- 4,999	156	95	47	98	99	92	434	96	434	96	96	96
5,000- 7,499	256	96	62	96	116	96	229	98	229	98	98	98
7,500- 10,000	169	98	22	103	38	96	233	98	233	98	98	98
10,000- 25,000	178	100	17	91	38	92	17	85	17	85	88	88
Over 25,000	2	94	6	90	9	100	100	1,242	100	1,242	100	100
TOTAL OR AVERAGE	2,015	100	665	100	1,242	100	3,922	100	3,922	100	100	100

port of the other. Both proved of great intangible value in building up local government by helping towns, villages, and cities to help themselves. Both provided a model of intergovernmental relations bringing the superior leadership and perspective of the state to bear on local government without resort to dictation. Unfortunately, the perfection of state property tax techniques did not improve property tax machinery at the local level. The local assessor and board of review functioned better but this was not due to any improvement in the setup of these functions. Such improvement is overdue and is quite possible without a radical adjustment in the responsibility for the administration of the tax.

There is altogether too much disposition to regard the general property tax as a fixed and permanent institution. The results are not good enough to warrant this complacency. At the same time the tax is so well adapted to supply local revenue without reliance on central units of government that its future retention in some form is assured. Improvements can be made by modifying exemptions, by changing the basis of the tax (perhaps the European basis of annual value as distinguished from selling value would be preferable) and by refining administration. Only the last of these suggested improvements has been considered here. It is the least controversial and perhaps the most important. If the much needed revival of interest in state and local government occurs after the war, it might well begin with the major financial support for local government—the property tax.

That other states could utilize with great advantage the experience here described seems evident. For this to happen, however, the underlying conditions of such success as Wisconsin has achieved

would need to be present or developed. These include able leadership in the central tax agency, adequate financial support, and an able and experienced field staff (sustained by an effective merit system of civil service). Local officials resent "supervision" by political henchmen no more experienced, nor otherwise better qualified, than themselves. They welcome the assistance of men who are thoroughly

qualified and who understand varying local conditions and problems.

We have suggested that there are more effective ways to attack the property tax administration problem than to cry for centralization panaceas from ivory academic towers. Effective state and local cooperation provides a ready avenue of improvement in this as in many other problems of state and local government.

A National Fuel Policy: II. Anthracite - Another Chance?

By ROBERT M. WEIDENHAMMER* and WALTER H. VOSKUIL**

This is the second of a series of articles dealing with the impact of war on our mineral resources. The first (see this Journal, May, 1943, pp. 127-140) discussed in general terms the place of coal in a national fuel policy. Subsequent writing will accord separate treatment to bituminous and coking coal, natural gas, crude oil, and synthetic liquid fuels. (Editor)

THE history of the American anthracite industry is the record of a great natural resource lying compactly in five counties of northeastern Pennsylvania and therefore in close proximity to the population centers of the Atlantic shores. This valuable mineral resource is only 90 miles from Philadelphia and 140 miles from New York City. The record starts in 1769—with commercial production and shipment getting under way in 1807. It was the desire to get anthracite to the cities that provided an impetus for the building of the canals and later of the railroads that replaced them. Profits made from mining, transporting and selling anthracite built some of the largest early fortunes which, in return, provided the savings and capital formation so essential to the development of the vast spaces beyond the Alleghenies.

Later, especially during the decade following the Civil War, the industry became the object of a scheme by ambitious railroad men to establish a monopoly. In

evitably there followed the slow-grinding process of a democracy's fight against exploitation by a few. Then, those years from 1926 to 1938 show anthracite as an industry rapidly nearing financial collapse. But the outbreak of World War II in 1939 has given it another chance.

The record of the industry during the period of 1870 to 1930 is recounted without any desire to haul the skeleton out of the closet. What really matters now is what management and public policy, given its second chance today, can do to revitalize the industry and to assure the nation the best utilization of its still abundant but not so evenly divided types of fuel resources.

The Mineral Resource

The anthracite fields are divided into three trade regions—Lehigh, Schuylkill and Wyoming. This classification is used in the district organization of the United Mine Workers of America. (District 1 corresponds to the Wyoming region, District 7 to the Lehigh region, and District 9 to the Schuylkill region.) Geographically, the anthracite area is classified by fields—the Northern, Eastern Middle, Western Middle, and Southern. This classification is used in technical operating studies because it follows more closely the geologic conditions that largely influence the methods and cost of mining. The Northern field is the same as the Wyoming region. The Lehigh field and that part of the Southern field lying east of Tamaqua (known as the Panther Creek

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TABLE I. AVERAGE REALIZATION OF ANTHRACITE SHIPMENT FROM BREAKERS, BY SIZE GROUPS AND REGIONS, 1921-1940

D—Domestic Sizes; S—Steam Sizes; A—All Sizes

YEAR	Lehigh			Schuylkill			Wyoming			Total		
	D	S	A	D	S	A	D	S	A	D	S	A
1931	\$6.74	\$1.97	\$5.07	\$6.71	\$1.82	\$4.85	\$6.97	\$2.15	\$5.70	\$6.87	\$2.00	\$5.35
1932	5.92	1.98	4.48	5.98	1.77	4.30	6.18	2.13	5.05	6.09	1.98	4.74
1933	5.68	1.96	4.29	5.68	1.72	4.06	5.85	2.06	4.73	5.78	1.93	4.46
1934	5.79	2.00	4.43	5.74	1.78	4.17	5.84	2.14	4.78	5.80	1.98	4.53
1935	5.45	2.05	4.22	5.41	1.82	3.98	5.47	2.16	4.47	5.45	2.03	4.29
1936	5.65	2.15	4.38	5.63	1.88	4.03	5.70	2.26	4.67	5.67	2.10	4.42
1937	5.01	2.24	3.99	5.02	1.99	3.73	5.00	2.37	4.21	5.01	2.21	4.03
1938	5.10	2.35	4.13	5.09	2.13	3.86	5.10	2.47	4.32	5.10	2.33	4.16
1939	4.69	2.25	3.81	4.73	2.10	3.64	4.60	2.35	3.95	4.64	2.25	3.85
1940	5.23	2.37	4.18	5.19	2.29	3.99	5.27	2.52	4.45	5.24	2.41	4.27

Valley) make up the Lehigh region. The Schuylkill region comprises the Western Middle field and that part of the Southern field lying west of Tamaqua. The total area of the four fields is about 484 square miles—the Northern covers 176 square miles, the Eastern Middle 33, the Western Middle 94, and the Southern 181.

Geologic conditions affect the percentages of domestic and steam sizes produced and consequently the value of the product as a whole. In the Wyoming and Lehigh regions the percentage yield of the higher-priced domestic sizes is relatively high; in the Schuylkill region it is less because of the crushing of the coal by faulting and folding of the beds. In 1941 the breaker output of the Wyoming region comprised 70.2 per cent domestic sizes and 29.8 per cent steam sizes; the Lehigh region, 62.8 per cent domestic and 37.2 per cent steam sizes; the Schuylkill region, 57.7 per cent domestic and 42.3 per cent steam sizes (Table I).

The nature of the coal beds—that is, their geologic surroundings, the method of mining, and the structural characteristics of the fuel itself—result in the pro-

duction of a material that varies from fines (barley and buckwheat sizes) to large lumps. Anthracite from the mine is prepared in breakers, i.e., large lumps are broken down to commercial sizes and the entire output is screened into five domestic sizes and four (or five) steam sizes (virtually screenings).¹

These sizes vary in market value, depending upon demand and competitive relationships in the fuel market. The average value in a recent year (1940) ranged from 89 cents a ton for buckwheat No. 4 to \$3.16 for buckwheat No. 1 in the steam sizes, and from \$4.12 for pea to \$5.32 for egg in the domestic sizes. The realization obtained, therefore, varies with the proportion of sizes that a given mine can produce. This may range from an average of 70 per cent for the higher-valued domestic sizes in the Wyoming basin to 58 per cent for domestic sizes in the Schuylkill district. Among individual mines within each district the variations are

¹ The domestic sizes are: lump and broken (small part of the total), egg, stove, chestnut, and pea. The steam sizes are: buckwheat, rice, barley, buckwheat No. 4 and boiler.

still wider. The distribution of sizes obtainable from a mine is largely a matter of the geological surroundings and physical structure of the coal and is beyond the control of the operator. His over-all realization is therefore a function of the size distribution obtainable from his mine (Table II).

In an industry in which the physical conditions vary from mine to mine, the cost of production varies widely also. Again, dealing in averages only and not considering the case of each individual mine, the first thing to point out is that costs of mining and average per ton realizations have no correlation. There can be no general conclusions drawn for the fields as such, but the general thesis of what can be found in this industry may be stated as follows: An operation that has a large

percentage of high-valued domestic sizes and low-production costs is very profitable; an operation with a large percentage of low-valued steam sizes and high-production costs is a marginal mine or a losing operation. This conclusion requires no profound analysis but merely directs attention to the fact that, in an industry where the variables of size distribution and mining costs are numerous, any combination of cost-realization relationships can be expected and, as an examination of individual statements shows, this is indeed the fact.

The hypothetical reserve of 15 billion tons—the physical quantity of recoverable coals in the seams—may be curtailed by the limiting factor of price realizations and costs. A survey of price realizations and costs in 1940, for example, showed

TABLE II. HISTORY OF ANTHRACITE, 1921-1943.
(Thousands of Tons)

YEAR	Production	Consumption (Calculated)	Value at Breaker, Washing Dredge	Average Sales Value	Losses as Reported by Bur. Int. Rev.
1921	90,500	—	—	—	—
22	54,700	—	—	—	—
23	93,300	—	\$563,532	\$6.04	—
24	87,900	—	525,642	5.98	—
1925	61,800	—	363,384	5.88	—
26	84,400	—	515,684	6.11	—
27	80,096	—	420,942	5.80	—
28	75,348	—	393,638	5.70	—
29	73,828	—	385,643	5.63	—
1930	69,385	67,627	354,574	5.52	—
31	59,646	58,408	296,355	5.35	\$ 2,762,000
32	49,855	50,500	222,375	4.74	17,009,000
33	49,541	49,600	206,718	4.46	11,300,000
34	57,168	55,500	244,152	4.53	8,578,000
1935	52,158	51,100	210,131	4.29	16,300,000
36	54,579	53,200	227,004	4.42	10,989,000
37	51,856	50,400	197,599	4.03	20,590,000
38	46,099	45,200	180,600	4.16	23,700,000
39	51,487	49,000	187,175	3.85	9,000,000
1940	51,485	49,700	205,490	4.27	"Break even"
41	56,368	53,700	240,275	4.59	Profit*
42	60,000	—	—	—	Profit*
43	62,000*	—	—	—	—

* Estimated

that 8 million tons were being sold below the cost of production and that the difference was being made up out of working cash reserves and by foregoing the allowance for depletion and depreciation. It is obvious that as mine after mine enters into a period of increasing costs until its costs exceed cash receipts from sales, the unmined coal ceases to exist as an economic commodity and, for all practical purposes, as a coal reserve. Economic exhaustion of the reserve may, therefore, occur while there is yet a substantial coal deposit remaining in the seams.

Increasing costs are characteristic of all mining enterprises at some period during the life of a mine. This is simply a consequence accompanying the recovery of coal from greater depths, or over longer haulages after the most accessible part of the seam is exhausted, or ultimately upon exhaustion of the best or most accessible seams when resort to the thinner and poorer quality seams becomes necessary. Increasing costs can be and in fact are offset by technological advances the effect of which is to reduce production costs. Eventually, increasing physical difficulties of mining more than offset any possible improvements in mining and technology.

In the anthracite area, with a history of substantial production covering a century, no doubt there are now many mines and possibly whole mining districts where an approach of costs to realizations or an excess of costs over realizations materialized between 1930-1939.

History of the Industry

The early development of the anthracite industry has reflected, as in a test tube, most of the problems of industrial expansion, integration and monopoly, as

well as the inevitable public reaction to it. All the known techniques and tricks of promotion and financing, and of alliances between financial and political groups for joint control of coal and of the canals and railroads, were used here for almost a century. It is now over half a century since the growing resentment toward this public-be-damned attitude brought its violent reaction—the unsuccessful fight for an “office of price administration” and the successful fight for a “death sentence” to end the joint control of coal mines and railroads. This was one of the first American industries in which labor battled with management for its right to collective bargaining. It was probably the largest and most prosperous American industry to be hit destructively by technological progress. By 1938 its leading companies, which a century before had played the principal role in capital formation, had come to what seemed the end of the road with a combined working capital deficit of \$26,000,000.

World War II, however, has given the industry a new lease on life. It has always been a war-baby. It got its first real impetus in the War of 1812, when the people in Philadelphia, Baltimore and New York were freezing because the war had shut off their regular supply of coal from England. It was the Civil War which enabled the Delaware and Hudson Canal Company to pay a cash dividend of 34 per cent in 1863 and 31 per cent in 1864. Ironically enough, it was World War I which brought such a demand for coal that the anthracite industry could not supply its market west of the Alleghenies and thus lost much of it permanently to its rival—bituminous coal—even before both coal industries were threatened by the oil burner.

The early history of anthracite is not

well-documented but Howard N. Eavenson begins his record of production with 1769.² Both Eavenson and Homer Greene³ believed that in 1776 anthracite was shipped by boat to a point near Harrisburg and then by wagon to Carlisle, Pennsylvania, for use in forges to make arms. The Continental Congress, through a resolution of December 26, 1776, established a magazine at Carlisle.

According to Eavenson, Dr. Johann David Schoepf, who came to this country with the Hessian troops, visited the Wyoming Valley in November, 1783, and inspected a mine. Eavenson wrote:

"Going down, the slate gradually changes to a bed (not deep) of fine, light, lustrous coal which rubbed, leaves no smut on the hand and burns without any bad smell. This coal is to be had for the taking, and a smith who has set up his shop nearby praises it much."⁴

In 1805 Professor James Woodhouse, of the University of Pennsylvania, wrote a lengthy report on anthracite which Eavenson calls the first example of coal research in this country.⁵

In 1807 the commercial production and shipment of coal from the Wyoming region really began when Abijah and John Smith loaded some fifty tons of it on an ark and floated it down the Susquehanna. When they encountered sales resistance, they hired a mason and erected grates in the public squares, thus demonstrating the new fuel and its proper use.⁶

As early as 1808 a far-sighted man—Albert Gallatin, Secretary of the Treasury

under Thomas Jefferson—submitted a comprehensive report to Congress on "Roads and Canals" in which he estimated the probable traffic to be handled. Of the Delaware & Chesapeake Canal he wrote:

"The coals wanted for Philadelphia, and which, brought down from the sources of the Susquehanna and Potomac, but principally from the vicinity of Richmond, would naturally pass through the canal, have been alone estimated at more than one hundred thousand tons a year."

During the winter of 1812 when Philadelphians almost froze to death—as, incidentally, did Napoleon in Russia that winter—two clothing merchants, Maurice and William Wurtz, got busy and bought several thousand acres of anthracite land in Luzerne County at prices of from fifty cents to three dollars an acre. But it was not until March 13, 1823, that the legislature of the state of Pennsylvania passed an act authorizing Maurice Wurtz to "improve" the Lackawanna River, and on March 23 of that year the state of New York authorized the Delaware & Hudson Canal Company to "build a canal between the rivers Delaware and Hudson." In 1829 a mule railroad was built from Carbondale, where the mining was carried on, to Honesdale on the Lackawaxen, a distance of 16½ miles. From there it was 108 miles by the canal to Rondout on the Hudson and then 94 miles down the river to New York City.

The total cost of this project (the Delaware & Hudson Canal) was only \$2,305,599, of which \$1,500,000 of capital stock was privately subscribed. The state of New York provided a loan of \$800,000.

Although the War of 1812 had given Wurtz the inspiration, it was the depletion of the forests east of the Alleghenies that expanded the market for coal and

² *The First Century-and-a-Quarter of American Coal Industry* (Pittsburgh: Eavenson, Alford and Auchmuty, 1942), p. 498.

³ *Coal and the Coal Mines* (Boston: Houghton Mifflin Company, 1889), p. 46.

⁴ Eavenson, *op. cit.*, p. 140.

⁵ Eavenson, *op. cit.*, pp. 141-143.

⁶ Eavenson, *op. cit.*, p. 144.

made the mines and canals and railroads prosperous. As early as 1829 the differential in favor of coal in the mine regions (where transportation costs was not a factor) had increased to over 100 per cent. Six cords of good oak and two cords of hickory cost \$57.78; four tons of anthracite (with approximately the same B.T.U. content) cost \$27.50.

The economic appraisal of different fuels, though put on a scientific basis only after the use of B.T.U.'s had been adopted, received early attention. In 1827 Marcus Bull published his *Experiments to Determine the Comparative Value of the Principal Varieties of Fuel*. Eavenson quotes from it the estimate of the amount of fuel used in Philadelphia from March, 1826, to March, 1827, as indicated in the tabulation below:

Wood (140,150 cords, average price \$4.50)	\$630,675
Charcoal (320,000 bushels, average price .10)	32,000
Coal, Lehigh & Schuylkill (25,545 tons) ^a	178,815
Coal, Richmond (95,000 bushels @ .30)	28,500
Coal, Liverpool (30,465 bushels @ .33)	10,053
 TOTAL	 \$880,043

^a A total of 47,545 tons of anthracite was sent to Philadelphia in 1826, of which 22,000 tons were sent abroad.

Records indicate, however, that as late as 1833 the people of Philadelphia and New York City spent much more for oak and hickory than for coal. Philadelphia spent \$741,321 for wood and \$404,401 for coal; New York City spent \$631,250 for wood and \$496,180 for coal.

Other canals were built, such as the Schuylkill (by Stephen Girard) and the Lehigh. But they finally lost out to the railroads, which do not freeze up during winter when coal traffic is at its peak. The coal railroads prospered—especially during the Civil War—and, with cash balances mounting in the banks, their ambitions also grew. In 1870 Franklin B.

Gowen (at the age of 33) became president of the Philadelphia & Reading Railroad, for which he had been counsel since 1864. Gowen had dreams of building an empire for his railroad and he used all the might of his political influence in Harrisburg and the advantages of competitive freight rates, as well as \$40,000,000 of cash, to realize his aims. Within four years he acquired 100,000 acres of coal lands and mines. Soon he was able to announce: "Although the Philadelphia & Reading Railroad is confined within a circle described by a radius of one hundred miles, it moves far more tonnage than any railroad in the United States." His company now owned a monopoly not only of transportation but also of mines, telegraph lines, and ironworks. For the most part, it also owned the houses in which the miners lived and the stores where they spent their money—and, to keep things in order, it had its own police force. It seemed a perfect set-up. But being a bit too perfect for the company, it aroused a storm of public criticism. In 1874 the new constitution of the state of Pennsylvania prohibited railroads from holding coal lands; however, since this provision was not made retroactive, it really only aided Mr. Gowen by protecting his empire from potential competitors.

In 1892 a committee appointed by the legislature of the state of New York (and the state of New York is inhabited by *consumers*, not *producers*, of anthracite) reported that an illegal monopoly existed; and it introduced a bill to license coal carriers and coal dealers and to fix a maximum price of \$4.50 a ton for coal to be adjusted every three months by administrative action. This embryo OPA proved to be stillborn.

Agitation by angered consumers and liberals did not abate, however, until they

TABLE III. DISPOSITION OF SEGREGATED COAL COMPANIES

YEAR	Railroad	Stock Purchaser	New, Segregated Coal Company	Price
1913	Pennsylvania	M. A. Hanna & Co.	Susquehanna Collieries	Not public information
1921	Delaware, Lackawanna & Western	Delaware, Lackawanna & Western Stockholders	Glen Alden	\$ 4,230,000
1921	Central of New Jersey	Reynolds Syndicate	Lehigh & Wilkes-Barre	\$32,134,000 ^a
1923	Reading	Reading Railroad Stockholders	Philadelphia & Reading Coal & Iron Co.	\$ 5,600,000 ^a
1923	Lehigh Valley	Lehigh Valley Railway Stockholders	Lehigh Valley Coal	\$ 1,212,160 ^a

^a Purchasers were required to file affidavit of non-ownership of railroad shares.

found a banner-carrier in William Randolph Hearst. "Bust the anthracite monopoly" became the battle-cry of the Hearst faction and it was their leader who, on November 3, 1902, filed a petition with the Interstate Commerce Commission which started a series of investigations and decisions destined to drag on until 1914, but which nevertheless brought about the "death sentence" for joint control of anthracite and railroads.

The steps in the segregation of the mines and the railroads were chronologically as follows:

- 1902—I.C.C. investigation started on complaint of William Randolph Hearst.
- 1906—Commodities Clause of Hepburn Act forbidding railroads to ship coal which they owned at time of shipment.
- 1909—First Commodities Clause case: *U.S. v. Delaware & Hudson*, 213 U.S. 366. Stock ownership of coal companies by railroads permitted but direct ownership of coal lands forbidden.
- 1920—Second Commodities Clause case: *U.S. v. Lehigh Valley*, 254 U.S. 255. Stock control of coal companies by railroads outlawed.

Table III shows how the railroads divested themselves of the control of the mining operations, at least as far as formal control is concerned. Even formal control, however, was retained by two railroads. Today the Delaware, Lackawanna and Western Railroad still owns 100 per cent of the stock of the Hudson Coal Company, a somewhat mixed blessing since the railroad during the thirties had to advance to the coal company an unsecured loan of \$20,287,406.43 in order to keep it out of receivership! Likewise, the Lehigh Coal & Navigation Company still controls the Lehigh & New England Railroad Company, the Lehigh & Susquehanna Railroad, and the Wilkes-Barre & Scranton Railroad, as well as the Lehigh Navigation Coal Company.

Summary: 1870-1930

The history of the anthracite industry from 1870 to 1930 covers the rise and fall of a mighty natural resource monopoly. It would take volumes to do justice to the presentation and interpretation of the economic forces for which the industry was a

battleground during those sixty years. The essential facts can be summarized in the following fashion.

A. The anthracite railroads bought up about 96 per cent of the reserves of anthracite coal-bearing lands, not because they could possibly get around to mining them within a century but because they wanted to keep other railroads out of their territory or at least to effectively prevent them from ever obtaining any of the profitable freight business from their controlled mines.

B. After having achieved this, the anthracite railroads—to recoup the costs of acquiring and holding on to these coal reserves—adopted the simple policy of establishing very high freight rates on anthracite but low prices for coal-at-the-mine. This discouraged and frustrated independent anthracite producers and meant that even the controlled mines usually lost money on operations. The anthracite railroads, however, were very prosperous. In the case of the then largest producer, the Philadelphia & Reading Coal & Iron Company, we find that up until its segregation in 1923 its parent, the Philadelphia & Reading Railroad Company, had for decades maintained a dividend of 15 per cent a year while the coal company had never paid a dividend and had accumulated a short-term debt to the railroad of \$72,000,000.

C. Although the battle for segregation of the railroads and the controlled coal mines has been fought with vigor for nearly a century, the results merely prove that if five mining companies control a natural resource, located in a few adjacent counties and served by only a few railroads, trust-busting campaigns will remain rather ineffectual.

D. The early monopolistic nature of the anthracite industry has left its mark in at

least two ways: (1.) The industry, in spite of selling a strictly seasonal product, had been very successful in stabilizing production and employment *throughout the year* in the period from 1870 to 1930. An ironclad, uniform price policy—which allowed for substantial discounts off-season but kept the price high during the heating season—accomplished this very desirable stability. (2) The almost militaristic discipline of output and pricing and the absence (up to 1926) of competition from other fuels imbued the industry with a spirit of bureaucracy which resulted in a lack of flexibility and true entrepreneurial drive.

Then Came the Oil-Burner

Therefore, when new fuels—especially fuel oil—began to contest its markets during the twenties, the anthracite industry failed to adapt itself by the development of coal stokers and better methods of delivery of coal and disposal of ashes. Failure to adopt cautious dividend policies caused the industry to lose most of its working capital, even before operating losses overtook it and finally brought it, in 1938, to what looked like the end of the road.

From the era of railroad-controlled mines two problems remain to burden the anthracite industry. One is that railroads, in order to assure themselves of future sources of freight, bought up practically all the coal lands available and therefore left the segregated mining companies with enormous reserves but with equally large annual property tax bills. The other problem is the freight structure which, in the opinion of the Anthracite Coal Industry Commission, is at least 24 per cent too high and should be reduced in order to improve the position of anthracite in competition with other fuels.

The commission has recommended that the tax burden of the mining companies resulting from their enormous land holdings should be lowered by permitting them to keep enough reserves for twenty years but that the rest of the reserve should be sold either to the state of Pennsylvania or to the federal government. The proposed transaction would be a self-liquidating one as the purchaser would issue bonds which in turn would be redeemed through the receipts from the royalties paid after twenty years by the coal companies. The coal companies, on the other hand, not only would receive the cash to pay off their own bond issues from the sales of their "surplus" reserves, and therefore save their heavy fixed charges in the future, but they would also be relieved of the burdensome property taxes now due annually on their coal lands.

This scheme appeared an admirable one for all concerned with the exception of the municipal bodies who would have lost their tax receipts, unless provisions for them also could somehow have been made. Governor George H. Earle was not re-elected and the scheme today appears dead as the dodo, and this in spite of the fact that "on January 18, 1938, Governor Earle, the representative of the United Mine Works, the operators and the Commission had unanimously endorsed this proposal."⁷

While the Anthracite Coal Industry Commission thus completely failed in having its suggestions made legal, the co-operative atmosphere which its efforts created among the state of Pennsylvania, the operators and the United Mine Workers, finally resulted in the adoption, as of January 29, 1940, of a voluntary plan for

stabilizing the industry through adherence to a system of production quotas. The purpose of this plan is to effect a proper relationship between production and market-demand and to allot to each producer his share "on the basis of what he may reasonably expect to produce as a percentage of the industry's total output."

The plan—which received legal status from the state of Pennsylvania on July 7, 1941—is administered by a committee of nine, appointed by the governor of the state of Pennsylvania and comprised of three representatives each of the operators, the miners, and the public. Each leading company has been assigned a quota, as shown in Table IV, and this quota is translated each week into a definite industry tonnage on the basis of the movement of coal during the previous week. Contrary to the provisions of the Bituminous Coal Act, no minimum prices are set; but, since July 7, 1941, prices of anthracite have been close to the maximum prices set by OPA and therefore the absence of minimum prices has been of no consequence.

Table IV compares the quotas set for the five leading producers with their ac-

TABLE IV. PERCENTAGE OF OUTPUT OF ANTHRACITE BY LEADING PRODUCERS, 1930, AGAINST TOTAL OUTPUT OF INDUSTRY ON QUOTAS SET FOR 1940

LEADING PRODUCERS	Actual Output (1930)	Quotas Set (1940)
Glen Alden Coal Company	18.8%	18.84%
Philadelphia & Reading Coal & Iron Company	12.5	12.25
Hudson Coal Company	10.4	9.62
Lehigh Valley Coal Company	9.4	7.32
Lehigh Coal & Navigation Company	5.1	5.34

⁷Report of the Anthracite Coal Industry Commission (Commonwealth of Pennsylvania, Harrisburg, 1938), p. 9.

tual output ten years earlier in 1930. It appears rather remarkable that during the stormy decade of the thirties the relative share of these five companies changed so little.

The production quota agreement, however, was not enforceable and the proportion of coal mined by "legitimate" producers who refused to become voluntary parties to the agreement is about 8 per cent of the industry's output. An even more serious obstacle to the successful application of the plan is presented in the fact that during 1940 and 1941 in excess of 4,000,000 tons (or nearly another 10 per cent of the total output) was "bootleg" coal, i.e., coal illegally mined from the properties of the big companies.

The bootlegging of anthracite is a result of chronic unemployment in the industry. Idle miners invade the properties of the large companies, dig shallow shafts, and mine enough coal to support their families.⁸ Soon after bootleg coal became available, enterprising operators of fleets of trucks established a profitable business buying and selling it in the nearby cities at cut-rate prices. The coal companies tried to prohibit this practice but the local courts refused to evict the miners from their working places or to put them in jail. Respect for private property thus vanished completely and it took World War II to reduce this evil to minor proportions.⁹ The draft and the demand for

labor by the mining companies began to accomplish what neither the commission nor the "plan" had succeeded in doing.¹⁰

Only when the war stimulus of demand for anthracite is a thing of the past will the acid test of the production quota plan without minimum prices be at hand. If demand should fall off sharply, the companies might resort to price-cutting below cost of production and they might also be tempted to exceed their production quotas. As the plan provides no effective means of enforcing this voluntary agreement the industry may again face chaos unless a state or federal plan with enforceable minimum prices and/or production quotas is put into effect.

We have discussed how the industry became a monopoly and how public indignation set about to destroy that monopoly or, at least, to harness it. We have also seen how the oil burner did the job much more effectively than all the decisions of the courts. Finally, we have seen the very foundation of the industry undermined by the activities of bootlegging miners while the harried courts and a willing legislature were unable to meet the challenge. The production-control plan is

timate mines and may finally result in the complete loss of a large part of the total anthracite reserves. Meanwhile, legitimate producers are almost driven out of business. They are burdened with local and federal taxes, royalties and safety regulations, none of which bothers their bootleg competitors. A bootleg coal production of four to six million tons means a loss to the companies of from ten to fifteen per cent of their old market and a constant pressure on their prices. In addition, the water hazards created by the bootleg holes increase pumping costs. The fact that all bootleg coal is stolen from the properties of the legitimate producers is really the least of their problems.

⁸ According to the Report of the Federal Anthracite Commission as released on April 21, 1942 (77th Congress, 2nd Session, House Document No. 709), as late as March, 1941, over 10,000 miners engaged in bootleg operations in approximately 3,000 holes, producing between four to six million tons a year.

⁹ Bootlegging, in the opinion of the Coal Commission, has been carried on at a tremendous waste of coal which is left in the ground or thrown away as small sizes. Since no pumping is done by the bootleggers, water is accumulated in the bootleg holes. This threatens the life of men working in the legi-

¹⁰ Probably an all-time high in effrontery was reached when representatives of the bootleggers not only asked for a quota for themselves but also high-pressed enough of the state representatives at Harrisburg into giving their petition support in the legislature. Fortunately, the scheme was voted down.

now working well enough in the sellers' market created by World War II with the bootleggers in the army or working in the legitimate mines. It seems likely, however, that if the industry should again face a period of low demand the production plan will fall like a house of cards and anthracite bootlegging may again be with us unless the basis for a better future for the industry is planned now.

TABLE V. NET INCOME AND WORKING CAPITAL POSITION OF COMPANIES FOR APPROXIMATELY 90 PER CENT OF TOTAL ANTHRACITE OUTPUT*
(In Millions of Dollars)

YEAR	Net Income	Working Capital
1926.....	33.8	111.1
1927.....	13.8	99.8
1928.....	15.1	89.5
1929.....	15.2	69.9
1930.....	13.4	44.2
1931.....	8.6 ^a	33.0
1932.....	10.5 ^a	22.7
1933.....	8.6 ^a	16.5
1934.....	1.7 ^a	16.3
1935.....	10.2 ^a	8.9
1936.....	2.4 ^a	4.6 ^a
1937.....	17.4 ^a	10.8 ^a
1938.....	14.8 ^a	27.0 ^a
1939.....	14.9 ^a	15.7 ^a
1940.....	0.5 ^a	10.6 ^a

* Report of the Anthracite Coal Industry Commission, Commonwealth of Pennsylvania, Harrisburg, 1938. The figures from 1935-1940 have been added by this writer from the sources used by the Commission.

^a Deficit.

Loss of Working Capital

A principal source of weakness in the industry—a weakness which rests solely in past financial policies of the anthracite companies themselves—has not been discussed: If the industry had not lost its working capital in the years between 1925 and 1937, could it have put up a better battle for its share in the domestic fuel market?

For an industrial company—or for a whole industry—which finds itself in an impaired working-capital position only one road remains provided there is still time for taking it: curtailment of output and of employment until sufficient working capital can be re-accumulated from undistributed earnings. However, the fact that decreased output usually results in higher unit costs of production and in further losses rather than profits will only too often make this road a dead-end street.

The anthracite industry has provided a most striking instance of industry-wide shortage of working capital. At the end of 1938 its working-capital deficit amounted to nearly 27 million dollars and it took World War II to reverse this trend¹¹ which otherwise would have meant the end of the industry, at least under the free enterprise system.

During the years 1931-1934 while an aggregate deficit of 12.7 million dollars—as shown in Table V—was incurred, cash dividends totalling 34.0 million dollars were still being paid out. Small wonder that the working capital declined from 44.2 millions in 1930 to 16.3 millions in 1934—regardless of the fact that, in 1931, all and in 1934, part of the depletion charges were earned and thus became available for working capital.

Because many companies continued to pay dividends in excess of net income, the industry's working capital had already declined from 111 million dollars to 33 million dollars before the first unprofitable

¹¹ Only when the outbreak of World War II in September, 1939, disturbed the shipping of English coal to Canada and thus increased the demand for American anthracite did the industry take another lease on life. Later, the full demand of the defense program in this country and the shortage of fuel oil in the East combined to restore the industry to a profitable basis.

year of 1932. Had the industry followed a policy of maintaining its working capital, it might have had sufficient vitality to meet the competition of other fuels by cost reduction through more mechanization and more aggressive sales engineering, such as the development of stokers to combat oil burners. Since the industry made a profit as late as 1931, it should have responded promptly to the general industrial recovery of 1933. Instead, management—having no adequate working capital at its disposal—could do little to defend its share in the fuel market. Employment in the industry during the period from 1926 to 1939 fell from 175,000 to 82,000 and production declined proportionately.

The financial record of the five leading anthracite producers for the years 1937 to 1942 (Table VI) covers the full swing from the decline of business in the latter half of 1937 and the all-time low for the anthracite industry in 1938 to the upturn that started late in the fall of 1939. Among them the five companies hold 96 per cent of the total anthracite reserves and produce about 60 per cent of the industry's total output, as they did two decades ago.

The companies' present financial situation and their policies illustrate old difficulties and new hopes. In our opinion, the new lease on life which the companies now have should be used to strengthen working capital and to pay off debt rather than to pay dividends. Such a policy is not only socially desirable but is certain to benefit the stockholders in the long run more than would liberal disbursements at this time.

Present Status of Five Leading Producers

A brief survey of the present status of

the five leading anthracite producers reveals some significant facts.

1. *Glen Alden Coal Company*, the largest and most profitable producer, is a merger of the former coal properties of the Lackawanna Railroad and the Central Railroad of New Jersey. The present funded debt of Glen Alden has been reduced to \$28,700,000 from the \$51,000,000 issue given to the stockholders of the Lackawanna Securities Company in 1932. During the six years under review, debt has been cut by \$11,300,000, a rate which (if continued) should free Glen Alden of debt in ten to fifteen years. It should be noted that depreciation and depletion charges exceed interest requirements by over \$1,000,000 a year. Thus, even in a profitless year, the company has sufficient cash not only to pay the interest but also to retire over \$1,000,000 of principal.

2. *Philadelphia & Reading Coal & Iron Company*, the second largest producer and holder of by far the largest coal reserves in the industry, has the record of paying interest charges nearly three times its depreciation and depletion allowances. The company filed a petition under Section 77 B of the Bankruptcy Act in February, 1937, because of its inability to meet the March 1, 1937, interest requirements. A plan of reorganization provides for income bonds of only \$10,000,000. The company, now free of financial worries and otherwise well equipped for operation, should be able to concentrate on production and selling problems.

3. *Hudson Coal Company* is still fully controlled by its parent, the Delaware & Hudson Company, which also owns the Delaware & Hudson Railway Company. During the last decade the coal company had to borrow \$20,000,000 from its parent railroad to maintain interest payments on the \$26,544,000 of bonds held by the

TABLE VI. FINANCIAL RECORD OF LEADING ANTHRACITE PRODUCERS, 1942-1937

(All figures in millions, except Net Income per Share and Dividends per Share)

COMPANY AND CAPITALIZATION	YEAR	TONNAGE	SALES	DEP. AND DEPREC.	INTEREST CHARGES	NET INCOME	INTEREST CHARGES: TIMES EARNED	DIVIDENDS PER SHARE		WORKING CAPITAL	DEBT
								PFD.	COMMON		
<i>Glen Alden Coal Co.</i> Old funded debt, \$51,160,000. Bonds, 4s, '65, \$28,700,000. Common stock, 1,750,487 shares.	1942	9,471	\$61.3	\$2.53	\$1.20	\$4.91	5.10	—	\$2.81	\$17.3	\$28.7
	1941	8,800	53.2	2.40	1.29	3.81	3.96	—	2.17	1.70	31.0
	1940	7,955	44.5	2.28	1.37	2.91	3.13	—	1.66	1.25	33.5
	1939	8,233	42.8	2.33	1.47	.31	1.22	—	.18	.25	35.0
	1938	6,200	35.8	1.93	1.52	.40	1.27	—	.23	.25	36.4
	1937	7,644	38.8	2.33	1.60	1.18	1.73	—	.67	.50	40.2
<i>Philadelphia & Reading Coal & Iron Co.</i> Old funded debt, \$51,160,000. New proposed capitalization, \$10,216,569 income 6s, '62. Common stock, 1,021,656 shares.	1942	a	\$43.3	\$1.20	\$3.00	\$.07	1.03	—	—	—	\$51.6
	1941	a	37.7	1.16	3.00	\$.34 ^b	.89	—	—	—	53.65
	1940	5,022	32.2	1.16	3.06	1.48 ^b	.52	—	—	—	53.65
	1939	4,765	26.5	1.12	3.09	4.80 ^b	.55 ^b	—	—	—	53.65
	1938	4,586	29.0	1.10	3.66	7.46 ^b	1.44 ^b	—	—	—	53.65
	1937	5,900	37.2	1.16	3.05	6.94 ^b	1.27 ^b	—	—	—	53.65
<i>Hudson Coal Co.</i> Bonds, 5s, '62, \$26,544,000, plus \$20,229,547 advances from Dela- ware and Hudson R.R. Co., which owns all the common stock of the Hudson Coal Co.	1942	5,000	\$26.5	\$1.64	\$1.27	\$.09	.93	—	—	—	\$46.8
	1941	4,499	21.7	1.33	1.27	.29 ^b	.66	—	—	—	55.3
	1940	4,200	19.0	1.39	1.55	1.20 ^b	.05 ^b	—	—	—	56.8
	1939	4,344	17.7	1.42	1.73	2.28 ^b	1.01 ^b	—	—	—	56.9
	1938	3,565	16.3	1.53	1.44	1.35 ^b	.62 ^b	—	—	—	55.1
	1937	4,077	17.9	1.64	1.23	2.31 ^b	.67 ^b	—	—	—	50.7
<i>Lehigh Coal & Navigation Co.</i> Funded debt, \$28,900,000. Common stock, 1,929,127 shares.	1942	3,855	\$31.8	\$1.08	\$1.32	\$1.80	2.36	—	\$.93	\$.65	\$4.80
	1941	3,225	26.4	.98	1.34	1.80	2.35	—	.94	.65	\$28.9
	1940	3,045	23.2	.94	1.39	1.10	1.80	—	.57	.30	29.6
	1939	2,600	22.0	.94	1.39	.01	1.02	—	.01	.10	31.0
	1938	2,411	19.6	.83	1.40	.04 ^b	.97	—	.02 ^b	.10	31.5
	1937	2,511	20.2	.84	1.42	.30 ^b	.97	—	.16 ^b	.30	32.1
<i>Lehigh Valley Coal Corporation.</i> Funded debt, \$11,387,000. 6% cum. pfd. stock, \$22,659 shares. Common stock, 1,200,437 shares.	1942	3,822	\$17.2	\$1.09	\$.65	\$1.02	3.07	\$4.97	\$.371	—	\$6.00
	1941	3,075	17.5	1.00	.65	1.45	3.24	7.77	.90	—	11.48
	1940	3,188	15.6	1.04	.70	.76	2.09	3.34	.06	—	4.51
	1939	3,667	16.7	1.34	.73	1.55 ^b	.82 ^b	6.83 ^b	1.86 ^b	—	13.18
	1938	3,188	15.6	1.44	.79	1.50 ^b	.84 ^b	6.66 ^b	1.82 ^b	—	13.61
	1937	3,885	17.9	1.45	.85	.94 ^b	.31 ^b	4.14 ^b	1.35 ^b	—	14.58

* Figures not published.

b

public. With depreciation and depletion charges now exceeding interest charges, the coal company should be capable of solving its debt problem; but another period of losses such as those suffered from 1937 to 1940 could hardly be withstood without resort to the bankruptcy act.

4. *Lehigh Coal & Navigation Company* is the oldest of the five companies, having been created with perpetual charter by special act of the legislature of Pennsylvania on February 13, 1822. The major portion of the company's income is derived from the three railroads which it controls and its ownership of 700,000 (13 per cent of the total amount outstanding) shares of stock of the National Power & Light Company. The company is thus more of an investment trust than a coal company and its present liberal dividend policy is probably based largely on this fact. Interest payments are still substantially in excess of depreciation and depletion allowances. Therefore, a more conservative dividend policy might work to greater ultimate advantage to the stockholders.

5. *Lehigh Valley Coal Corporation* has the smallest funded debt of the five pro-

ducers and its interest charges are only about 60 per cent of depreciation and depletion allowances. It is noteworthy that management has built up working capital from practically nothing in 1938 to \$6,000,000 at the end of 1942, and has reduced its debt by 25 per cent during the last six years. The continuation of such a policy should ultimately benefit stockholders more than dividend payments at this time.

The anthracite industry's working capital had been allowed to decline from \$111,000,000 in 1926 to below \$33,000,000 in 1931, and by the end of 1938 the industry was in the situation of trying to operate with a working-capital deficit of \$27,000,000. When management has to use all its resourcefulness just to meet the next payroll, not much thought can be given to a broad program for restoring the competitive situation of an industry.

Since anthracite is used primarily for the heating of domestic dwellings, its place in the total consumption of fuels for residential use indicates to a large extent its position in the national fuel market. Few data on the residential use of fuels were available until the War Production

TABLE VII. CONSUMPTION OF ALL HEATING FUELS FOR RESIDENTIAL USE, BY REGIONS, 1940

(Thousands of Units)

REGION	Bituminous (net tons)	Anthracite (net tons)	Coke (net tons)	Wood (cords)	Gas (MCF)	Fuel Oil (Bbls.)
New England	1,805	4,260	1,604	3,845	5,871	21,928
Mid. Atlantic	10,099	24,203	2,660	3,303	48,391	34,206
E. N. Central	33,320	958	3,529	8,323	37,497	10,199
W. N. Central	13,977	98	683	12,121	33,463	9,040
S. Atlantic	4,798	1,092	131	14,209	17,905	6,410
E. S. Central	3,214	—	219	10,687	7,819	153
W. S. Central	274	—	71	10,735	47,002	1,025
Mountain	4,292	—	32	3,357	18,750	1,125
Pacific	719	—	28	6,106	61,862	5,479
United States	72,499	30,611	8,957	72,686	278,561	89,566

TABLE VIII. AVERAGE CONSUMPTION OF ALL HEATING FUELS PER DWELLING, BY REGIONS, 1940
(Units Consumed)

REGION	Bituminous (tons)	Anthracite (tons)	Coke (tons)	Wood (cords)	Gas (MCF)	Fuel Oil (Bbls.)
New England	7.13	7.21	7.11	13.06	273.7	28.80
Mid. Atlantic	6.59	6.60	6.68	13.19	208.8	31.70
E. N. Central	6.32	6.56	6.18	14.61	148.1	27.43
W. N. Central	6.91	7.44	5.85	13.31	125.8	31.20
S. Atlantic	3.18	4.93	2.67	8.26	85.4	17.01
E. S. Central	2.89	—	2.32	8.92	59.0	12.42
W. S. Central	1.96	—	1.35	6.39	39.3	7.00
Mountain	7.20	—	4.78	13.44	127.9	18.03
Pacific	4.86	—	2.46	6.86	43.9	16.45
United States	5.76	6.67	5.87	9.36	72.0	26.09

Board, through its Office of Civilian Supply, made such a study.¹² Tables VII and VIII above were compiled from tabulations included in that study. As the tables are not reduced to B.T.U. equivalent values, their usefulness is of course somewhat restricted. The great variation in the use of fuels in the different parts of the country reflects the differences in climate, the proximity to the origin of the fuels, and the cost of the fuels to the consumer. The high income level and the low average temperatures of the northeastern regions account for their high percentage of centrally-heated dwellings¹³ and their use of expensive fuels. In contrast, the southwestern states, with a low-

er income level and a higher average temperature, are the largest consumers of wood, usually grown near the farms.

Conclusions

As long as this war lasts the anthracite industry will be concerned only with efforts to fill the demand in the face of shortages of labor and equipment. After the war the competitive struggle with other fuels will again demand attention. The opportunity to hold or even to gain new markets will be the best since the end of World War I.

Probably a million new houses may be built annually. An overwhelmingly large percentage of these houses will be occupied by persons in the lower-income class for whom the cost of the installation of the heating unit and of the annual fuel bill will be of major concern.

The price of the heating unit will often be given more consideration than the long-term cost of the fuel to be used. In shopping for a house, the prospective owner will be more concerned with the required down payment and the terms of the mortgage than with the probable fuel

¹² *The Residential Consumption of Fuels in 1940*, Office of Civilian Supply, War Production Board, 1943.

¹³ A *centrally-heated* dwelling (other than an apartment) is one in which the heat is generated by a single furnace or boiler and distributed through conduits to other areas of the structure by means of a piped hot-air, steam or hot-water system. A *space-heated* dwelling (other than an apartment) is one heated by equipment not connected with other parts of the structure by pipes or conduits. Such equipment includes fireplaces, stoves and radiant heaters. An *apartment* is a dwelling unit in a structure which houses more than four families.

bill he assumes for years to come. If the combined cost of the coal stoker, the coal bin and the ashpit should exceed the original cost of an oil burner, the purchaser of the house may be inclined to favor the use of fuel oil regardless of the annual fuel cost he thereby incurs. Once the heating unit is installed, the houseowner has for all practical purposes committed himself to use for years to come that particular fuel for which the heating unit was built.

When the initial cost of the heating unit and to a lesser degree the relative annual fuel bill for either coal, oil or gas are compared, such a comparison will be decided in favor of coal only if its use stacks up well with the other fuels in terms of convenience (automatic feeding and temperature control) and cleanliness (dust-free delivery and ash disposal). It is on this angle that the anthracite industry must focus its attention.

The "big-inch" pipeline and new fast tankers may well intensify, at least temporarily, the post-war competition of fuel oil. If the anthracite industry weathers this period of readjustment, the day may come sooner than now expected when all available crude oil will be needed for motor fuel and when, therefore, fuel oil will retire from the home-heating market.

Meanwhile, the anthracite industry can prepare for the post-war period in at least three ways.¹⁴

I. Each individual company can put its own house in order by paying off debt and building up its working capital as the safest method to prepare for the storms that may be ahead.

II. The industry as a whole can cooperate even more closely than in the past with its retail dealers and with the manufacturers of automatic stokers. More service to the consumers and less expensive and more standardized stokers are essential factors if anthracite desires to court its markets.

III. The anthracite industry can join with the bituminous coal, natural and manufactured gas, and oil industries in a joint study of the long-term outlook for fuel. In this way a truly national fuel policy can be shaped that would give the American people the best and cheapest supply of heat and power commensurate with proper regard for the conservation of these irreplaceable natural resources.

¹⁴ See also: "Coal Faces Post-War Readjustment" (*Mining and Metallurgy*, October, 1943), a reprint of a paper read before the joint fuel meeting of the American Society of Mechanical Engineers and the American Institute of Mining Engineers, Pittsburgh, 1943, by the present author.

War and Post-war Problems of Irrigation Planning in the Northern Plains

By ROY E. HUFFMAN*

"Public policies are always established today for tomorrow's good based on yesterday's experience." (M. M. Kelso)

THE above statement is an excellent one—if true. Too many times in the history of irrigation development it has not been true. What, then, can the agricultural economist do to direct irrigation development along lines that have been proved by experience?

Until comparatively recently, irrigation was considered primarily a field for engineers. Surveys to determine the feasibility of proposed projects were seldom participated in by agricultural economists. Recent years have brought a revolution in thought and in action regarding irrigation. We now know that engineering feasibility does not assure economic feasibility; that the blueprint of the farm and the community is as important as the blueprint of the dam or the canal; and that the economic and social benefits accruing to the area surrounding an irrigation project can be greatly increased if orderly planning is carried out. This realization is briefly but well summarized in the following statement: "Each new project should be considered on its merits and it is necessary to know more than that it is possible from an engineering standpoint to get water to and over the land."¹

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¹ P. L. Slagsvold and J. D. Mathews, *Some Economic and Social Aspects of Irrigation in Montana*, Montana Agr. Exp. Sta., Bulletin 354, January, 1938.

Irrigation has become an important field for the research and planning activities of agricultural economists. In all probability, irrigation development will boom as part of a post-war public works program. Irrigation development has the double advantage of providing employment during the construction period and of making available additional agricultural opportunities.

Present-day irrigation development has the advantage of the best in engineering technique. Agronomists, horticulturists, and animal husbandrymen are constantly adding to the fund of information on crops and livestock in relation to irrigated agriculture. It seems desirable to consider how the agricultural economist can contribute in the fullest measure to the successful operation of existing irrigation projects and to a successful post-war irrigation program. A well-rounded irrigation development program is not complete without the services of men trained in all phases of agricultural economics; farm management, finance and credit, land economics, marketing, rural sociology, etc. Men are needed who can see and understand all phases of a development program. Most of all, they must be able to visualize the place any irrigation project should occupy in the over-all resource development of an area.

The development of irrigation research and planning as an important field of work for agricultural economists has brought with it certain responsibilities. The agricultural economist working in the Northern Plains has two very definite responsi-

bilities: (1) He should make available, through research, data which may logically supplement the investigations of action agencies and be of assistance in determining the merits of proposed projects. His research should be in terms of the relationship of the projects to the economy of the region.² He should do everything consistent with the facts to discourage the building of uneconomical projects.

(2) In many cases, projects that can be shown to be uneconomical will still be approved and constructed because of political expediency and the pressure of promotional organizations. Under such conditions, it is still the responsibility of the agricultural economist who participates in the planning phases to do all he can to secure the maximum benefit from the project and the funds expended therein. This last is a responsibility not only of the agricultural economist but also of every person concerned with the agricultural problems of the area. Too many agriculturists dismiss that responsibility with a shrug of the shoulders because they, themselves, had not been in favor of building the project. Nevertheless, although they consider the project uneconomical, it is now a part of the resources of the area.

It is the purpose of this paper to consider briefly the place of irrigation development in the war and post-war economy of the Northern Plains, and to summarize the ways in which the agricultural economist can meet his responsibilities through (1) his research work and (2) his planning activities.

There has been much discussion, pro and con, regarding the place of irrigated agriculture in the war effort. Irrigated farms offer the only large opportunity for

much diversification of crops in the Northern Plains. There is little, if any, possibility of growing many war crops on the dry lands of the Plains.³ The shifting of some farmers to irrigated land where certain vitally needed crops can be grown and the combining of small dry-land farms into larger units can make possible a better utilization of land, labor and machinery.

Construction of new irrigation projects has been stopped because such developments compete for labor, machinery and materials which are needed in the production of war goods. There are, however, many arguments being presented in support of an accelerated emergency reclamation construction program to bring additional acreages of irrigated land into crop production as quickly as possible. It is estimated that 2,853,805 acres of land could be irrigated in a short time. About one-fourth of this acreage could be given water in 1944 and most of the remainder in 1945. Forty-two projects in fifteen states are included in the program. Twenty-five of the projects were partially completed when the War Production Board ordered the termination of work.⁴

The construction of additional irrigation projects may take on added significance if it appears that the war will last any considerable length of time. Of more immediate importance is the fullest possible utilization of existing irrigated land. It is pointed out that there are more than 20,000,000 acres irrigated in the 17 western states, or 13 per cent of all crop land.⁵

² See G. H. Craig, "War Developments in Land Utilization and Policy in the Northern Plains," *Journal of Farm Economics*, February, 1943, pp. 176-187.

³ Figures are from newspaper accounts of an emergency program outlined by Commissioner John C. Page, of the Bureau of Reclamation, at the request of Senator Carl Hayden of Arizona.

⁴ Peter L. Slagsvold, "Irrigation and Food Production," *Land Policy Review*, May, 1942,

⁵ Sherman E. Johnson, "Irrigation Policies and Programs in the Northern Great Plains Region," *Journal of Farm Economics*, August, 1936, pp. 543-555.

It would seem that every effort should be made to secure the maximum from such land, particularly in view of its great productivity and its proximity to the expanded war centers of the Pacific Coast and Rocky Mountain Regions.

The possibilities of wartime irrigation expansion are dwarfed by the potentialities involved in a post-war program of irrigation development. The research and planning which may be completed before the return of peaceful days should make possible the placing of a firmer foundation under the post-war irrigation development program. It goes without saying that there will be intense rivalry between states, communities, and promotional organizations to secure approval of projects for development. It will be too late then to begin compiling information which can serve as the basis for selection and planning of projects.

The fact that the major emphasis will be on the necessity of providing employment and farming opportunities for thousands of men released from the armed forces is likely to reduce the consideration given to the development of irrigation projects as a part of a planned area resource program. Every effort should be made to emphasize the importance of achieving integrated use of irrigated and dry land resources. To fail to provide for integrated land use is unfair, both to society in general which will help bear the cost and to the people who will become its settlers.

A vast reservoir of information is being developed by federal and state agencies detailing the merits of potential irrigation projects for post-war construction. Much can be added to the reports on proposed projects in the Northern Plains regarding the place of the projects in the adjustment and stabilization of the areas in which they are located. Also, much work needs

to be done in considering possibilities for achieving permanency of the results obtained. Too often in the past, maladjustments have cropped up about as rapidly as land was irrigated. It would appear that consideration should be given to possible ways, among them rural zoning, of preventing the recurrence of maladjustments in the area surrounding an irrigation development.

Most irrigation development has been carried on in the past with little or no thought given to the area immediately surrounding the irrigation project. Seldom has a project area been thought of as extending beyond the boundaries of the irrigable land; but a project area should be considered as including all of the surrounding dry land which may benefit from and be influenced by the irrigation development. The distance a project will extend into the area around the irrigated land will depend on the character of the surrounding country.⁶

There are few, if any, potential irrigation projects left in the Northern Plains which are economically capable of standing alone, assuming no change in technology. Generally, the low-cost projects were built first and we have therefore moved in the direction of higher cost developments. The irrigation projects of the future, almost without exception, can be justified only from the standpoint of their place in the resources of an area.

The inseparability of irrigated land and the surrounding area was recognized at an early date by Major John Wesley Powell, Director of the U. S. Geological Survey. Powell recommended the organization of pasture districts to be used in conjunction with irrigated land in his

⁶Roy E. Huffman and James L. Paschal, "Integrating the Use of Irrigated and Grazing Land in the Northern Great Plains," *Journal of Land & Public Utility Economics*, February, 1942, pp. 17-27.

famous "Report on the Lands of the Arid Regions of the United States" in 1879. Powell's recommendations were lost in the rush of western land settlement and were not to reappear until years later. Discussion of the relationship between irrigated land and the surrounding dry land first began to appear in farm management studies, which showed that the maximum utilization of the irrigated land could be secured, in many cases, only in conjunction with the surrounding area.⁷ Recognition of this relationship in farm management studies was soon followed by land utilization studies which gave some consideration to integration of irrigated and dry land uses.⁸

The integrated use of irrigated and grazing land has developed naturally to some extent in most ranching areas of the west. The natural development of integrated uses, in spite of the obstacles presented by the existing intricate land ownership pattern, speaks well for its soundness. It has taken a long time for us to recognize the obvious; it has taken even longer for us to include it as a basic part of our irrigation policy. It is to be hoped that no agricultural economist who works with the irrigation development of the future will be an "isolationist"; he should not expect a project to be separated from the surrounding land resources. Whenever possible, his research work should point out the inevitable inter-relationship between the irrigated and the grazing land of the west.

General acceptance of the expanded project area as the ideal will necessitate the development of research data to

vide a basis for definitely establishing the potentialities of an integrated use of the land. Too often, when it became evident that a proposed project was not economically sound in itself, it has been justified by some indefinite and highly questionable statement regarding the amount of expenditures which could be approved on the basis of benefits expected to accrue to the surrounding area. The idea of adjusting and benefiting large areas of dry land by properly integrating it with smaller areas of irrigable land has become a convenient "out."

Future irrigation development requires agricultural economists who, through their research, will develop factual pictures of the irrigated-dry-land relationships. There should be no place for individuals who support the idea of the integrated area merely because it is a good tool for securing the necessary funds but who, in actual practice, cannot see beyond the boundaries of the irrigable land.

It becomes obvious, then, that a true area picture can be based only on the most careful study of resources, including at least three major considerations:⁹ (1) the available resources—physical, human, and economic; (2) the existing obstacles, natural and man-made, which may prevent the fullest utilization of the available resources; and (3) the way in which the best possible utilization of resources may be realized, *taking into account the existing obstacles*.

It should be recognized, of course, that any summary of the physical, economic, and human resources of an area will be subject to changes in individual cases. It should also be pointed out, however, that

⁷ Sherman E. Johnson, *An Economic Analysis of Production Problems on the Flathead Irrigation Project*, Montana Agr. Exp. Sta., Bulletin 237, December, 1930.

⁸ David Weeks, A. E. Wieslander, and C. L. Hill, *The Utilization of El Dorado County Land*, California Agr. Exp. Sta., Bulletin 573, May, 1934.

⁹ It may be well to note that the agricultural economist can take as his starting point the engineering investigations made by the Bureau of Reclamation or State Water Boards. The research work of the agricultural economist should add the necessary economic data to such reports.

a study which presents data on (a) land classified according to use, grade, type of ownership, and method of control, (b) population classified according to age, sex, and marital status, and on (c) markets listed according to size, location, and facilities will remain fairly accurate for an area. When coupled with a frank appraisal of the obstacles to be met, such a study should make possible a sound determination of the place a proposed project has in the resource development of an area. Rather long-time decisions should be possible in respect to the possibilities of achieving integrated use of irrigated and dry land if based on thorough analysis.

Past experience is not too encouraging regarding the chances of financial success for irrigation projects. There are many reasons for this situation. Some projects should not have been built in the first place. The farm units established were often too small. Land of low fertility was expected to carry the same burden of cost as more productive land. Settlers lacked both experience and sufficient capital and were expected to pay charges on their entire acreage from the first year regardless of how small a part of it they had been able to get into production. Land values were often too high because of the activities of speculators.

These faults of previous irrigation developments point out rather clearly the problems to be met and the need for better selection and planning of projects. There is less likelihood of the financial failure of future projects if they are properly selected, well planned, and integrated with the surrounding area, and if a repayment plan is developed that fits the situation.

Attitudes regarding society's responsibilities in irrigation development have undergone radical changes in recent years. Because an irrigation project can stabilize

a large area and because cities and towns benefit, it is frequently proposed that the cost should be spread over communities, states, or the whole nation. It is also suggested that the repayment period should be lengthened still more, on the grounds that the farmer should not be required to pay in forty years for an irrigation system that is expected to last one hundred years.

Although society may be expected to assume part of the burden of irrigation development, there are still many problems to be solved in connection with the farmers' place in a repayment program. It should be remembered that experience in one area can be used only in a general way in determining how much farmers in another area can be expected to pay in construction charges and for irrigation water. The entire increment in net income, over and above direct cash costs, that results from an input of irrigation water will not necessarily be available to pay for the water but may be distributed to other factors with resultant increases in land values, level of living, taxes, and other items.¹⁰

The area development phase of irrigation should also be considered in determining the financing needed to carry a project through to completion. It is necessary that funds be available for financing the transfer of vacated farms which become part of a grazing area. The surrounding area cannot be integrated properly with the irrigated land without money, any more than the irrigation project itself can be developed without funds.

The development of research data is only half of the field open to the agricultural economist in areas of potential irri-

¹⁰ For a detailed discussion, see H. E. Selby, "A Method of Determining Feasible Irrigation Payments," *The Journal of Farm Economics*, August, 1942, pp. 637-646.

gation development. An even greater challenge is presented by the opportunities for putting research data to practical use in the selection and settling of sound projects. Achieving the goals set up for developing a project calls for the maximum in professional ingenuity.

Planning Farm Units

The farm unit is, of course, of primary importance in the success of any irrigation project. That many projects have been established with farm units of inadequate size is usually due to two reasons: (1) a desire to put as many people on the project as possible, and (2) failure to recognize the fact that large acreages per farm are needed in some areas because of climatic limitations, i.e., a short growing season and a limited variety of crops. As a result, many projects have gone through a slow, costly process of enlarging farms to adequate size. On one project the average size of farm is now more than twice the original.¹¹

In planning for farm units, the first thing to be worked toward is correct size. Experience seems to indicate that we will be making a mistake if we make a change from our traditional policy of encouraging family farms operated by independent middle-class citizens.¹² There is, however, no size of farm which can be settled on as the correct size for every family. The family-size farm concept must give way to that of the family-type farm. The consideration is not so much one of size or acreage as it is one of operating relationships.¹³ The situation is further compli-

cated by changes in the size of families, which adds to the problem of achieving flexibility in the size of farm units.

Integrating the use of irrigated land with that of grazing or dry land presents the opportunity for achieving flexibility in the size of farm units. The subdivision of irrigable land must be rather permanent because of the location of canals, ditches, and drains which form natural boundaries and barriers. It would be possible, however, to vary the size of operating units according to the amount of dry farm land or grazing land used with the irrigated land. When an aging farmer found himself with less available farm help, part or all of the grazing rights or dry farm land formerly contained in that farmer's unit could be transferred to another farmer with a growing family. In this way, fullest utilization could be attained for both land and labor.

Integrated land use will make it possible to locate more people on the irrigated land. For instance, 7,000 acres of irrigated land divided into self-contained irrigated farms of 100 acres each will make available 70 farms. If, however, each farm unit contains 70 acres of irrigated land plus an amount of grazing or dry farm land equal to another 30 acres of irrigated land, it will be possible for 100 farms to have the advantages of irrigation farming.

Another thing to be considered in determining the size of farm unit is the fact that, because of differences in the quality of the irrigable land, the farm units should vary in size accordingly. Time has proven that the practice of basing the size, shape, and location of farm units on some multiple of 40 acres does not give any fairer division of irrigated land than the rectangular survey system does of other land resources.

Dividing farm units rigidly has another

¹¹ P. L. Slagsvold, *Agriculture on the Huntley Project*, Montana Agr. Exp. Sta. Bulletin 342, June, 1937.

¹² Paul V. Maris, "National Land Tenure Objectives," *Land Policy Review*, July, 1941.

¹³ Charles S. Hoffman, "Do You Mean Family Type Farm?" *Land Policy Review*, June, 1942.

major disadvantage. Inasmuch as the location of canals, ditches, and drains is dictated by topographic conditions, land can be developed and farmed more cheaply if it is divided into natural units than if it is divided along arbitrary lines.¹⁴

After the sizes and shapes of the new irrigated farms have been determined, there remains the problem of deciding at what degree of development the farm shall be turned over to the new settler. Shall he be expected to make his way on rough, unleveled land, part of which may be covered with timber or sage-brush? Many people will say yes, and point out how the pioneers of an earlier day developed farms against even greater odds. True, everyone thrills to the tales of how those stalwart men hewed a farm from the wilderness and fought off the Indians at the same time. It would seem, however, that to insist that the settlers on new irrigation projects undergo the same hardships would be another example of our all too frequent tendency to guide public policy by outmoded conditions and experiences. The settler on a new irrigation project doesn't have to fight Indians but he does have to meet very difficult problems in securing the machinery, livestock, and building facilities that are necessary for survival in our present-day agricultural competition.¹⁵

The new settler who goes on to an undeveloped farm of 100 acres may succeed in getting 20 acres into cultivation the first year and another 20 acres each succeeding year, so that only if he is there for five years will he get the entire 100

acres into production. More than likely a different man will be found on the tract about the third year and possibly still another by the fifth year. The settler is required to pay construction and water charges on the entire 100 acres, regardless of how small a part of the farm may be producing. Few settlers have sufficient resources to survive such a period.

Land can be cleared and leveled much more cheaply through the use of heavy machinery before subdivisions are made than it can by the individual settler with his limited equipment. It should be pointed out, however, that even though the land may be developed before being turned over to the settler, it will be a few years before full production can be expected. Leveling of land to facilitate the spreading of irrigation water will necessarily make some areas temporarily unproductive.

In addition to the land resources, consideration must be given to the need for machinery, livestock, and buildings. The settler on a new irrigation project will have his chances for success reduced considerably if he lacks the necessary machinery and livestock to utilize fully the land resources and his available labor. Adequate buildings are important to the successful operation of any farm but are especially vital in the Northern Plains because of the severity of the winters. The possibility of success of any irrigation project is enhanced if the farms are going concerns from the start.

Area Planning and Adjustment

A program of integrating the use of grazing and dry land with the use of irrigated land tells us immediately that the task of planning for the farm units on the irrigation project is only half of the job. There is also the problem of planning for the surrounding area and achieving desirable adjustments.

¹⁴ See Edgar B. Hurd and Harold F. Holland, *Economic Conditions and Problems of Agriculture in the Yakima Valley, Washington*, The Yakima-Tieton Irrigation District, Washington Agr. Exp. Sta. Bulletin 393, December, 1940.

¹⁵ See Marion Clawson, "Planning For a New American Frontier," *Land Policy Review*, November, 1941.

The extent to which a new irrigation development may be used to adjust the surrounding area will depend, first of all, upon the characteristics of the area; that is, the nature of the area resources will determine to a large extent whether the integrated land use is to be an irrigated-grazing combination, or an irrigated-dry-farming combination, or some of both. Submarginal dry land may be reseeded to form the basis for an irrigated-grazing relationship and the available resources may be changed to some extent. It is estimated that one irrigated acre will stabilize the agricultural economy of three to four acres of dry farm land, or fully thirty acres of range land.¹⁶

Whether or not the settlers for an irrigation project are to be drawn from the surrounding area will also have considerable effect on the extent to which a new irrigation development may be expected to change the area. Every time a settler for an irrigation project is taken from the surrounding area, the door is opened for a possible adjustment in land use or population or both. Unless immediate advantage is taken of the opening, the door will be slammed shut when another family moves onto the vacated farm or when the farm is absorbed into a unit already of adequate size.

There are two important ways in which the selection of settlers from the area surrounding a project may be utilized to adjust the area itself. (1) If a settler is selected from an inadequate farm unit, the vacated farm may be combined with another small farm to form an operating unit of adequate size. (2) If a settler is selected from an isolated farm in an area that should be used for grazing, the vacated farm may be regrassed and utilized as part of a grazing area with subsequent

savings in the cost of providing public services to the formerly isolated family.

A third possibility exists for extending the stabilizing influence of the irrigated land into the surrounding area. Small acreages of irrigated land without buildings may be made available on a rental basis to farm operators in the surrounding area who are close enough to utilize them. Such feed base tracts, varying in size with the needs of the individual operator, would make available a reliable source of livestock feed and add stability to the farm units involved.

Of course, merely having the irrigated land in an area makes feed available and increases general stability, but there must be a definite tie-up between the irrigated land and the dry land units. If the dry land operator produces enough feed at home during favorable years the operator on irrigated land may be forced to curtail his production of feed crops because of lack of a market. When the dry land operator needs the feed crops from the irrigated land, he may find the farmer under the ditch producing something else.

It is important to realize from the beginning that people can't be moved around like checkers on a board. The possibilities of achieving adjustments in the area surrounding an irrigation project are dependent to a considerable extent on the human element. Farmers will vary as to their interest in and aptitude for irrigation farming. In many cases the farm operator who obviously should be the first to move from a hopeless situation on dry land will be the last to consider doing so.

We still generally accept the right of an individual to settle wherever he desires, if he can secure the land, and we feel that it is nobody's business but his own what he does after he gets there. People can be shifted from one location to another only on a voluntary basis. The right of a man

¹⁶ John C. Page, "The Final Frontier and What It Means," *Land Policy Review*, January, 1942.

to live where he pleases should be questioned, however, if he becomes a burden to society in terms of the cost of providing schools and roads or direct relief at periodic intervals. Many isolated grazing areas in the Northern Plains should not be open to permanent settlement.

Too much emphasis cannot be placed on the consideration given to the human element and to the racial, religious, and cultural problems. These may be sufficient to offset many of the favorable characteristics of the physical and economic resources. It is also important, however, that many ideas and attitudes of the people in the Northern Plains be changed to fit the conditions at hand. For example, there are relatively few cases where irrigated land or irrigable land is immediately adjacent to any sizeable acreage of grazing land. The old notion that pasture land must be just outside the barn door should be discarded if full utilization of land resources is to be achieved. Livestock can be taken a considerable distance from the home ranch to pasture if they are moved out in the spring and back in the fall—as is done in the region of western forest reserves. The development of grazing areas will also require additional acceptance of cooperative control and management on the part of the farm operator.¹⁷

The agricultural economist working with area planning and adjustment in connection with a new irrigation project and the layman who has been led to expect big things in a hurry are likely to become discouraged at the slowness with which results are achieved. Above all, it is important to remember that the carrying out of such a program is *a process and not an event*.

¹⁷ See Glenn H. Craig and Charles W. Loomer, *Collective Tenure on Grazing Land in Montana*, Montana Agr. Exp. Sta., Bulletin 406, February, 1943.

The Great Plains is plagued with many problems which are the result of an unadapted settlement pattern. The original homesteads were of a size similar to corn belt farms; and the settlers attempted to establish a corn belt type of community, particularly with respect to public services—roads, schools, local government, etc.¹⁸ This situation is being righted gradually but at great cost to those who, in the meantime, must bear the expense of carrying on an unadapted pattern of public services.

The planning of an irrigation project in such a way as to secure the best possible utilization of the project area and the surrounding area should make possible at least a partial solution of some of the problems mentioned above. The removal of a farmer from an isolated area may make unnecessary the maintenance of a school or a stretch of road which was formerly a great expense to the taxpayers. The return of a large area to grazing may make possible the discontinuance of an outmoded form of township government which is still maintained in some areas of the Plains.

Even more important than what may be done in the dry land area is the fact that a concentration of population on a relatively limited, irrigated area will make possible the provision of *better quality and less costly* schools and roads. Also, it will allow a better religious and community life in general.

The development of irrigated land involves the problem of marketing farm products which were formerly of little or no importance in that area. The size of a new irrigated area is an important factor in determining what new marketing problems will arise and what new marketing

¹⁸ Carl F. Kraenzel, "New Frontiers of the Great Plains," *Journal of Farm Economics*, August, 1942, pp. 571-588.

facilities may be necessary. Areas of the Northern Plains without irrigated land are ordinarily concerned only with the marketing of small grains and livestock. Small areas of irrigated land may be used to produce feed crops for range livestock. In connection with larger areas of irrigated land, however, additional problems arise, particularly in the marketing and processing of increased production of dairy products. Other things, such as an increase in commercial vegetable production, may also create new marketing problems.¹⁹

Preservation of Democratic Ideals

Economic planning of the kind considered in this paper necessarily becomes rather all-inclusive; otherwise, in most cases maximum utilization of resources and a better living for the people cannot be accomplished. The days are gone when farmers could travel westward to new resources on the public domain. It was inevitable that the rights of the individual should eventually conflict with the best interests of society.

Much of the type of planning for irrigation discussed herein has been undertaken through the Great Plains Water Conservation and Utilization Program (WCU), established in 1939 within the Farm Security Administration. The WCU Program operated under two handicaps from the beginning. It should have started with a clean slate but instead was associated in the public mind with all the mistakes made by the old Resettlement Administration and by the Farm Security Administration. While the experience of these two agencies was of inestimable value in planning the WCU Program, the

willingness of the people to accept the program was diminished.

The WCU was also handicapped by an extremely poor job of public relations and explanation. Workers in the field found that almost everyone to whom a full explanation could be made readily accepted the philosophy of a program for integrated land use. However, the workers were prevented by organizational regulations from making statements available to the local press when questions arose regarding the program. All information for publication had to be released through a central publicity office and usually arrived too late to meet the situation at hand. More often than not, the news release still left the question unanswered. The lack of information concerning something the people could see going on all around them invariably led to a flood of ridiculous and damaging rumors. Complete and frank information must be available to the people of the area concerned if a planning program is to succeed.

Planning for a new irrigation development should be a part of the over-all agricultural planning of an area and should be participated in by local people. One of the principle objections raised against resettlement projects is in regard to the supervision maintained over the settlers. It is important that there be an understanding of the necessity for supervision. Many of the farmers on such a resettlement project would be getting an equal amount of supervision if they were on any other kind of job. Others with considerable managerial ability may require supervision because irrigation farming is entirely new to them. Those who show evidence of possessing an average amount of managerial ability are not likely to be bothered much by supervisors. Certainly, supervision should be kept to the minimum to encourage individual initiative. It should

¹⁹See Wendell T. Calhoun, "A New Laboratory of Marketing Studies," *Land Policy Review*, March, 1942.

be remembered, however, that agriculture supports as independent operators many men who have little managerial ability and who would be working under supervision in any other type of work.

As great a degree of individual freedom and ownership as possible should be preserved in the planning of projects. Resettlement projects which have avoided collectivism have been the most successful.²⁰ It should be pointed out, however, that the extent of ownership might well vary with the individual case. Many operators may find it desirable to postpone purchase of the farm itself until other obligations for livestock and equipment have been paid off. It is important to remember that security of tenure may sometimes be greater under a desirable leasing arrangement than under ownership.²¹ Planning should be done, then, with appropriate consideration as to whether, and if so, when ownership or tenancy may be the more desirable.

Summary

Irrigation is an inseparable part of the resources of the Northern Plains. Agricultural economists working in the area will find themselves involved with it regardless of their major field of endeavor or interest. They should contribute what they can to the success of irrigation development regardless of their personal feeling concerning irrigation projects which may be in existence. Once built, a project is a part of the resources of the area and should be considered as such. The time for the agricultural economist to encourage or oppose an irrigation pro-

ject is before it is built, and he can do this by contributing information which will give a better picture of whether or not the project should be built.

The agricultural economist, then, has two responsibilities with respect to irrigation in the Northern Plains: (1) He should do what he can to encourage the selection and building of only sound projects and (2) he should strive for maximum utilization of the projects which are built. The agricultural economist can fulfill these responsibilities through research and planning. His research should provide the basis for wise selection of projects and the foundation for developing sound, workable projects. His planning should be directed toward the development of a stable agricultural economy by achieving the fullest possible integration between irrigated land and the other resources of the area.

Irrigation can contribute much to the war food program. Of far greater importance, however, will be the place of a post-war irrigation development program in the Northern Plains. When peace comes it will be too late to begin organizing our ideas, information, and facilities to guide such a program. The watchword will be action—and quickly.

The problems confronting the agricultural economist in the Northern Plains were well summarized twenty-eight years ago by a writer who probably wasn't thinking of the Plains area. In discussing the utilization of every piece of land to the fullest advantage, he wrote:

"This means a new division and perhaps a redistribution of land in such a way that the farmer will have his due proportion of hill and valley, rather than that one shall have all valley and another all hard scrubble on the hill or all waste land in some remote place. It means that there will be on each holding the proper relation of tilled land and pasture land and forest land. . . . It

²⁰ See Oren Stephens, "F.S.A. Fights for its Life," *Harper's Magazine*, April, 1943, 479-487.

²¹ See Conrad H. Hammar, "The Land Tenure Ideal," *Journal of Land & Public Utility Economics*, February, 1943, pp. 69-84.

means that we shall cease the pretense to bring all lands into farming. . . . In the farm region itself, much of the old division will pass away, being uneconomical and non-social. The abandonment of farms is in some cases a beginning of the process but it is blind and undirected."²²

It is doubtful if anyone can better summarize the land utilization problems of the Northern Plains.

²²L. H. Bailey, *The Holy Earth* (New York: Charles Scribners and Sons, 1915), p. 58.

The Florida Everglades - A Region of New Settlement†

By JOSEPH T. ELVOVE*

THE Everglades of Florida is a region of unusual interest to the land economist: first, because it is one of the few remaining areas of new settlement in the United States; second, because its natural setting presents many problems somewhat peculiar to lands in tropical and subtropical climates; and third, because it presents in miniature one of the basic conflicts in American agriculture—namely, the clash between the goal for family-sized farms and the economies and efficiencies of mechanized, large-scale agricultural production.

To the mistaken writers of many elementary geographies and to the popular imagination the Everglades is an impenetrable swamp of south Florida covered by a dense, jungle-like growth of forest—a description properly applying only to the more scenic “Big Cypress Swamp” in the southwest corner of the state. Actually, the Everglades is a dull expanse of flat lands, covered in its natural state by saw-grass and interspersed by clumps of trees which serve to break the monotonous plain-like appearance. For drainage-district purposes, the region includes all the

lands bordering Okeechobee as well as all those to the east and southeast, exclusive of the coastal areas. Yet the “Everglades proper” is really a relatively restricted portion of south Florida immediately surrounding and to the southeast of Lake Okeechobee on which is found a predominance of organic muck and peat soils interspersed with sands. Although the drainage district contains about four and one-half million acres, probably no more than half of this area is known as “Everglades proper.”

As soon as Florida was admitted into the Union in 1845, it became apparent that the Everglades was among the foremost political issues in the state.¹ Beginning with the famous Buckingham Smith report ordered by the Secretary of the Treasury in 1847, a series of inquiries, reports, and controversies was inaugurated with respect to the reclamation and development of the Everglades, and it continues to the present day. Invariably the reports indicated the region to be a potentially wealthy agricultural area in need only of drainage and development.

Some effort was made to have the federal government perform the necessary reclamation work directly but the national policy, as outlined in the Swamp Lands Act of 1850, was to deed such lands to the states with the proviso that the funds from

† This paper is drawn from a report prepared in 1942 for the Florida State Production Goals Committee with reference to potential wartime expansion of agricultural production in the Everglades and is based on various reports and materials of the Everglades Experiment Station, the Soils Conservation Service, and the Extension Service, as well as on personal observation and study. The writer is particularly indebted to Dr. J. R. Neller, director of the Everglades Experiment Station; C. Kay Davis, supervisor of the Everglades survey of the Soil Conservation Service; and M. U. Mounts, county agricultural agent of Palm Beach County.

* Bureau of Agricultural Economics.

¹ Historical discussions of the reclamation and development of the Everglades are found in two Senate documents: “Everglades of Florida,” Senate Document No. 89, 62nd Congress, 1st Session, Washington, 1911; and “Florida Everglades,” Senate Document No. 379, 63rd Congress, 2nd Session, Washington, 1914.

the sale of these lands be used "as far as necessary" for their reclamation. In 1855 the twenty million acres received under the Swamp Lands Act and other public lands were set apart as a separate fund (called the Internal Improvement Fund of the State of Florida) to be administered by five trustees (all of whom were officers of the state government) and their successors in office. Up to 1903 only a few miles of drainage canals had actually been dug, despite large grants and sales of land to railroads, canal companies, and others. Finally, after nearly a half-century of bungling efforts, it became apparent that there was little hope of securing efficient, co-ordinated drainage works by the process of deeding away land to canal companies and other private organizations. Consequently, a drainage tax was instituted in 1905, followed in 1907 by the establishment of the Everglades Drainage District as a duly organized unit of local government. To implement these steps the state secured the assistance of the Office of Experiment Stations of the United States Department of Agriculture in making surveys and in preparing reclamation plans.

After intensive studies and following a long period of inactivity, reclamation was resumed in 1909. Whereas, up to January, 1909, only 13.24 miles of canals had been dug throughout the Everglades, several hundred miles were excavated and improved during the next 15 years, giving the area virtually all of the major installations now in use. These works, though they provided the necessary channels for drainage from Lake Okeechobee to the Atlantic Ocean, did not provide important laterals, ditches, and pumps which settlers found had to be installed either privately or through the creation of what are known as "subdistricts." Today there are 16 subdistricts in active operation within the Everglades Drainage District, as well

as numerous privately-constructed and owned auxiliary drainage works.

Although the original canals and other installations provided ordinary protection from excessive rains, they were totally inadequate against inundation from hurricane floods, a hazard always to be reckoned with in subtropical south Florida. Consequently, after two unusually severe hurricanes in 1926 and 1928, the federal government authorized the construction of a 65-mile levee on the south shore of Lake Okeechobee. With the completion of this levee, an intensive settlement of the Everglades finally got under way after nearly 75 years of sporadic efforts and failures.

Today it is estimated that there are about 110,000 acres of the Everglades proper under cultivation, most of which have been developed and brought into production during the last 15 years. Although this total seems small, it represents an important achievement in view of the drainage capacity and water control currently available and in terms of the actual area of the Everglades suited to intensive cultivation, which is estimated at less than 500,000 acres.

While the absence of drainage facilities and hurricane protection was an important factor in retarding the settlement of the Everglades, other handicaps peculiar to the region were equally responsible for its slow development and are now extremely important considerations in determining the actual areas that should be opened to agricultural and other uses.

According to the Everglades Experiment Station, the region is the largest known contiguous area of organic soils in the world. Most of the Glades is covered with muck or peat, varying in depth from a few inches to 10 or 12 feet; and in limited areas in the immediate vicinity of Lake Okeechobee the depth is as great as

20 feet. Because of their organic nature and because they are generally underlaid with limestone rock, the depth of soils determines in large measure their suitability for agricultural use. Even when properly controlled and used, the soils of the Everglades are subject to a normal amount of compaction and subsidence which, when the original deposit is shallow, makes their reclamation uneconomic. This is due, of course, to the fact that, as subsidence occurs, the digging of canals and ditches through limestone becomes a prohibitive undertaking.

In their natural state, the soils of the Everglades were generally protected from burning and ordinary oxidation by a high water table and frequently by complete inundation. Thus, destruction of organic matter was rare and cumulative vegetative decomposition continued unimpaired. Naturally, therefore, when the major canals drained the land and lowered the water tables in excess of immediate needs, large areas were subject to fire, oxidation, and subsidence. These problems, peculiar to a region of organic soils in a subtropical setting, were not anticipated by the early investigators, who understandably applied typical techniques of land drainage to this atypical region. It has taken many years of careful study by the Everglades Experiment Station and by the Soil Conservation Service to develop plans and procedures for a drainage system adapted to the peculiar problems of land reclamation and conservation found in the Everglades. Basically, these plans differ from ordinary drainage in that they provide for water control as well as for run-off. To protect lands not yet in use from fire and those in use from excessive oxidation, and to provide adequate water supplies to crops during dry periods requires not only drainage canals and laterals but pumps, dams, and impounding areas.

The importance of proper water control in the future development of the Everglades is reflected in SCS estimates that, if the burning, oxidation, and subsidence were to continue at the rate at which they have been moving for the last 25 years, the region may well become a barren waste of sand and limestone within 50 to 75 years.

Specialists at the Everglades Experiment Station and of the Soil Conservation Service have outlined steps to rewater, or flood, areas not now being used and to insure, when needed, reasonably high water tables on lands under cultivation. Such a program requires a closely coordinated system of drainage and a revision of the early reclamation policy which involved getting the water of the Everglades into the Atlantic Ocean as expeditiously as possible. Obviously, the organization and financing of such a program is far more complex than that necessary for ordinary drainage.

Another soils problem little understood until recent years concerns the mineral deficiencies peculiar to nitrogen-rich organic deposits. For example, it has been found that "salt-sickness" among cattle in this region involves not only the need for sodium chloride but for iron, copper, and cobalt. In crop production, too, trace minerals are essential to successful commercial operation. Naturally, the knowledge of soil deficiencies and procedures for overcoming them have required many years of experimentation and study, and until these problems were ferreted out and solved, the reports of early investigators indicating "unbelievably rich" soils served only to produce many disappointments and failures.

The mistaken ideas about Everglades weather rank second only to the erroneous and exaggerated notions regarding the extent to which the region abounds in rich

indestructible soils. Early in the history of the Everglades it became apparent that the future of the region would lie in the development of a semitropical agricultural production. Such a production in a nation lying principally in the temperate zone would yield opportunities in terms of crops which are largely imported or which can be produced in "off-season." Success, therefore, depends on an intimate knowledge of weather, which even today is far from complete.

The very first report on the possibilities of the Everglades, written by Buckingham Smith in 1848, stated categorically that "the Everglades are entirely below the region of frost," a statement that present-day vegetable and cane producers know to be untrue.² Even the famous Harvey W. Wiley, Chief of the Department of Agriculture's Bureau of Chemistry, reported optimistically in 1891, "Frosts are of rare occurrence, and when they occur usually do but little injury." Referring to rainfall and sugarcane culture, Wiley stated, "The Florida planter can confidently count on a continuous manufacturing season, being rarely interrupted by rains."³ Certainly the experience of sugarcane growers indicates that unpredictable spells of wet weather can very seriously hamper the cane harvest by heavy financial losses.

The problem of the Everglades with regard to precipitation is not so much in the total annual rainfall, varying from 50 to 60 inches, as it is in the matter of the distribution of such a precipitation. Since the relatively dry season normally occurs when vegetable production is at its height, pumping must be resorted to in order to raise the water table sufficiently for such

crops. For growers whose operations are close to Lake Okeechobee, pumping presents no serious problem; but for those whose farms are some distances from the lake or from deep canals, the water supply during dry spells frequently becomes dangerously low. Furthermore, since cane and vegetables are often grown on adjoining lands served by the same sub-drainage facilities, conflicts often arise over whether the water table should be raised or lowered. On the other hand, exceptionally heavy precipitation is a common problem to both vegetable and cane growers. Operators handling delicate crops, such as beans, must be able to remove excess water quickly or face a total loss of their plantings; while cane farmers must expect excessive harvesting costs and the lowering of sucrose content unless they remove the water quickly and continue scheduled milling operations.

Although admittedly the temperatures of the Everglades are exceedingly favorable, they are not nearly so perfect as early investigators believed. In fact, the high value of lands adjoining Lake Okeechobee is based not alone on their fertility and drainage but on their relative frost protection as well. The damage done by frosts depends first of all upon the drop in temperature and the nature of the particular crop. However, equally important are such factors as type of soil, wind velocity and direction, location with respect to bodies of warm water, and the manner in which the return to higher temperatures takes place. Thus, all muck and peat lands, because they radiate more rapidly, are considered "colder" than nearby inorganic soils. In contrast, the organic soils, known as "muck lands," which adjoin Lake Okeechobee are "warmer" than the sawgrass peat lands some distance from the lake because of the latter's warming influence.

² "Everglades of Florida," Senate Document No. 89, 62nd Congress, 1st Session, Washington, 1911, p. 53.

³ *Annual Report*, Secretary of Agriculture, Washington, 1891, pp. 163-171.

Since the rapidity with which return to higher temperature takes place after a frost frequently determines the extent of crop damage, local variations in air drainage become extremely important factors in judging weather influences on crops in the Everglades. While many of these local differences are known, large areas still remain where the desirable type of settlement and agricultural production is still a matter for experimentation and study.

Because of its peculiar soils, climate, and other unusual environmental influences, the successful permanent settlement of the Everglades was dependent upon the development of varieties of crops and breeds of animals adapted to the region. Examples of this development are sugarcanes especially suited to Everglades soils and breeds of Brahma cattle which are able to cope with the vagaries of a wet subtropical climate and with the pests that are common to that climate.

Still another need that had to be satisfied before the Everglades could become an area of profitable agricultural production was that for heavy equipment and machinery which could perform adequately on the wet muck lands. The designing of the Florida type "Athey wagon," a half-tractor vehicle for hauling sugarcane, is a notable example of equipment constructed especially to fill the particular needs of the region.

Although not confined in its influence to the Everglades, a factor nevertheless seriously retarding settlement was the confused ownership and tax situation resulting from the famous Florida land boom. When this spree was in full swing, land values went to ridiculously high levels; ownership by non-residents changed rapidly; subdivisions were laid out in areas where it was physically possible to do so; and in a few notorious instances streets and sidewalks were actually con-

structed. The collapse that followed was characterized by abandonment of ownership, the accumulation of delinquent county, state and drainage taxes, and the deterioration of existing drainage and other public facilities. Only after a series of state acts made possible a clarification of land titles, a "forgiving" of accumulated taxes, and the refinancing of the drainage and subdrainage districts, did it appear that a development based on a reasonable security of ownership could take place.

Of course, it would be a gross oversimplification to assume that only the factors which have been enumerated have had any bearing on the settlement of the Everglades. To be sure, economic conditions throughout the country and the competitive position of the region in the production of crops to which it was naturally adapted, were important influences. But the solution of those problems outlined was imperative regardless of whether the nation was enjoying a bountiful prosperity or suffering from a withering depression, or whether the region at the moment could expect to produce sugarcane profitably in competition with Puerto Rico.

At present it is estimated that about 110,000 acres of the Everglades proper are under cultivation of which approximately 30,000 are in sugarcane, 75,000 in vegetables, and the remaining 5,000 devoted to improved pastures, citrus, and other miscellaneous minor crops. Despite the limited capacity of existing drainage and water-control works and the statutory restrictions on the production of sugarcane, about 10,000 new acres annually were brought into cultivation before the war. At the present time, of course, settlement and development are inhibited by the manpower shortage, by the inability to secure materials and equipment, and

by the presence of more attractive opportunities in war industries. It may be safely assumed, however, that development will be resumed after the war.

Today the physical problems of how to produce in the Everglades environment are well along toward successful solution. The pressing problems of the region are no longer how to drain, or how to prevent subsidence, or what crops can be grown, or what trace minerals must be added to the soil. The answers to these questions are known. Instead, the most pressing problems of today are those associated with reconciling the conflicts and differences existing between the three distinct groups of people who have been attracted to the Everglades. One segment consists of those seeking permanent homes and opportunities in a new setting, the second set is migrant laborers, while the third group consists of those interested in land purely as a business investment. As in any region of new settlement, the presence of this third group makes for a mode of settlement and pattern of farming distinctly different from that of the traditional family-farm type.

Those seeking permanent settlement in the area encounter many difficulties in attaining economic security in such a setting as that of the Everglades. Under the Sugar Act, certain protection for cane workers in terms of wages, health, and living conditions is provided. For the laborers in the vegetable fields, protection is granted by the Farm Security Administration through its labor camps, educational and health programs, and similar services of an assistance or advisory nature, and through the very limited bargaining power of the laborers themselves.

Successful production of most of the vegetable crops is so dependent upon changeable weather and markets that an unexpected light freeze or a week's delay

in the maturing of a crop may spell the difference between a relatively fabulous profit or a total loss. Thus, the large operator—operating a packing house, serving as a silent partner, or otherwise “factoring” the production of vegetables—is not so likely to suffer irreparable financial loss as the family-farm operator. Then, too, the fact that vegetable growing is today essentially a large-scale enterprise, requiring the use of heavy machinery and equipment, has tended to discourage the traditional type of farm-family settlement. Instead, the more efficient use of equipment and packing-house facilities has encouraged settlement in terms of large farm units, the operators seldom actually living on their holdings—preferring, as they do, to live in town and commute to their farms.

Although the economic advantages of large-scale production in such regions as the Everglades eventually may mean the abandonment of the farm-family type of settlement as a social goal in agriculture, new techniques, new devices, and new plans will have to be devised to permit economic security. Certainly the indications at present are that the area is enjoying the great economies of large-scale production but at the expense of what is generally considered a desirable social organization. The success or failure of attempts to reconcile such basic conflicts in the Everglades may well serve to preview the future pattern of American agriculture. The development of economic and social arrangements for assuring permanent home seekers, migrant laborers, and managing investors alike an equitable share in the income and opportunities of the region, without losing the efficiency of large-scale operations which are so well-suited to the physical conditions, is the chief job of those interested in the agriculture of the Everglades.

Urban Land Department

Post-war Planning for Yorkville

III. - Housing In Transition In Yorkville*

IF America is to meet the needs of the common man when the war ends, post-war plans must be made now on other than an individual basis. The laissez-faire philosophy characteristic of the nineteenth and the early part of the twentieth centuries is rapidly becoming obsolete. In the field of housing, for example, initial steps in planning were taken before the war in the form of the government's greenbelt cities, the subsistence homestead communities, the slum clearance projects, and the privately financed limited-dividend developments. During the war most of the objectives of long-range planning are being temporarily shelved. All effort, both governmental and private, is directed now toward emergency housing.

Yorkville, that section of Manhattan extending from 63rd to 91st Streets and from Fifth Avenue to the East River, was untouched by the pre-war planned housing activity. Yorkville's housing is primarily a product of the laissez-faire era. In the late nineteenth century, when New York City's population was expanding rapidly as a result of immigration, Yorkville's housing structures were being erected by private enterprise—crowded on lots of twenty-five foot frontage and built in rows facing rectangular city streets. Some of this construction, along Fifth and Park Avenues, was of the single-family-dwelling type for the well-to-do; but in the majority of cases, east of Third Avenue, the multi-family accommodations were for the poor. The speculator in both land and buildings had almost uninterrupted license to achieve his objectives

and these constitute the major part of the housing heritage of the approximately 164,000 persons living in Yorkville today.

Residential Structures

Families Housed by Type of Structure, 1940. Yorkville is a community in which multi-family housing predominates (Chart I). The 16th Census defined a dwelling unit as the living quarters occupied by, or intended for occupancy by, one household. In the following discussion the terms *household* and *family* are used interchangeably. In 1940 structures of 20 or more dwelling units were in the majority; 59 per cent of the families in the west area and 41 per cent in the east area were so housed (Table 1).¹ At the same time, the west area had more than twice as many single-family structures as did the east area.

Change in type of structure, 1934 to 1942. As a result of demolitions, new construction, and remodeling in the interval from 1934² through 1941, interesting changes took place in the type of housing in both the east and the west areas. For example, 89 one- and two-family buildings

¹ As has been pointed out in the first section of this study, for the purpose of analysis Yorkville has been divided into two parts, i.e., the areas west and east of Third Avenue, designated hereafter as *west area* and *east area*.

² Prior to the Housing Census undertaken by the federal government in 1940, the Real Property Inventory of 1934 (sponsored by a number of governmental agencies) constituted the most complete record of residential structures available on a small, local-unit (census tract) basis. Both of these sources have been used in this study. In addition, the records on remodeling, demolitions and new construction, from 1934 through 1941, in the New York City Department of Housing and Buildings have been examined and the results included.

* This section of the study is the third of four. The first contained an analysis of land planning and zoning in Yorkville; the second discussed population in Yorkville; and the fourth will take up post-war housing needs in East Yorkville.

CHART 1. YORKVILLE—PREDOMINANT LAND USE AREAS

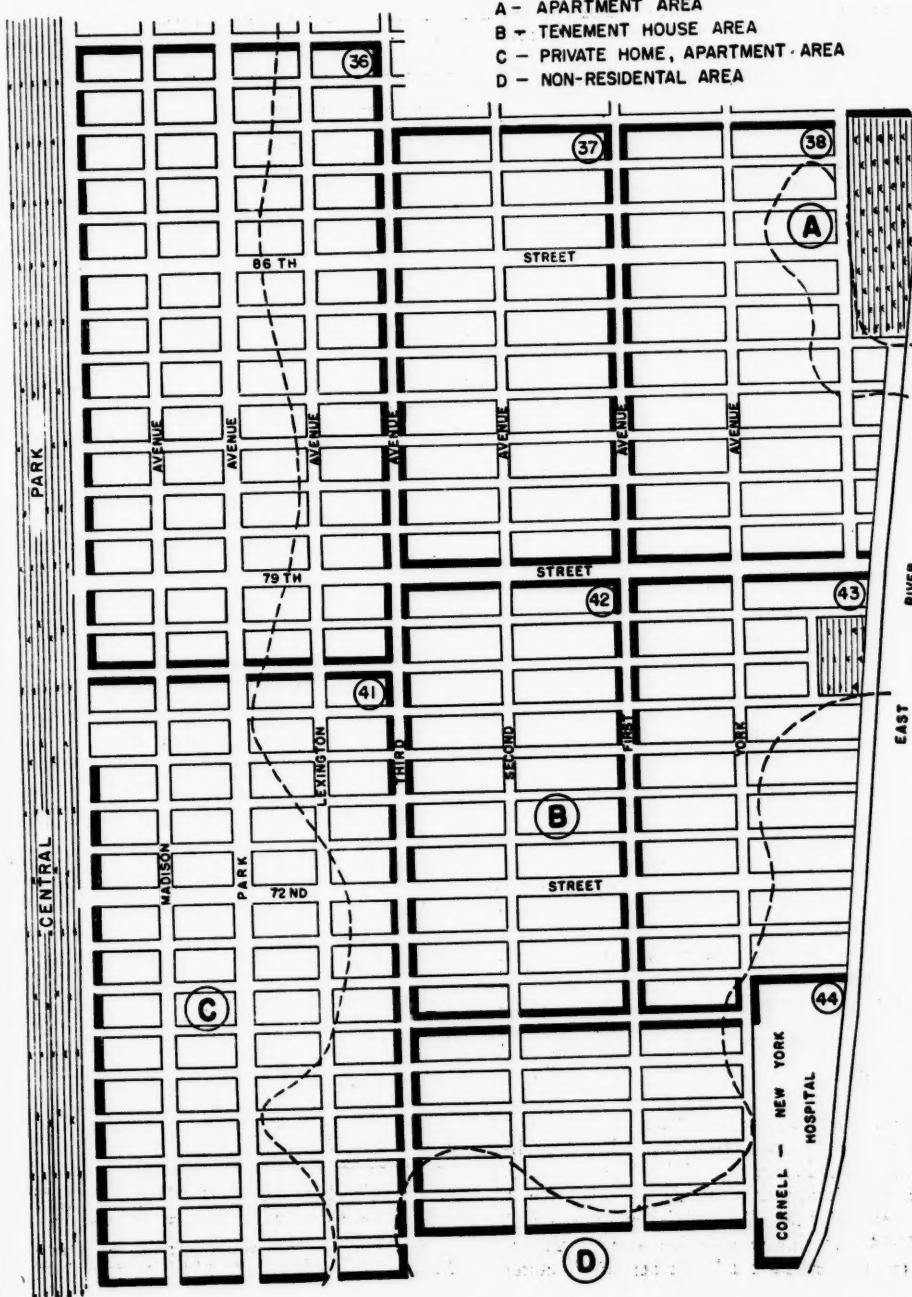


TABLE I. DWELLING UNITS CLASSIFIED BY TYPE OF STRUCTURE, YORKVILLE, 1940*

TYPE OF STRUCTURE	Total Yorkville		East Area		West Area	
	Dwelling Units		Dwelling Units		Dwelling Units	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Total	56,487	100.0	38,500	100.0	17,987	100.0
One-family	1,627	2.9	491	1.2	1,136	6.4
Two-family	378	.6	200	.5	178	.9
Three-family	411	.7	285	.7	126	.7
Four-family	456	.8	316	.8	140	.8
One to four-family with business	857	1.2	523	1.4	334	1.9
Five- to nine-family	9,740	17.2	7,695	20.0	2,045	11.4
Ten- to nineteen-family ...	16,713	29.6	13,272	34.5	3,441	19.1
Twenty families or more....	26,274	46.5	15,709	40.8	10,565	58.7
Other dwelling place (b)....	31	.1	9	(a)	22	.1

* Source: 16th Census of the United States, *Population and Housing, Statistics for Health Areas, New York City, Washington, 1942.*

(a) Less than one-tenth of one per cent.

(b) Either a room in a structure used primarily for business or other non-residential purpose or a tourist cabin, trailer, railroad car, boat, etc., if occupied by persons having no other place of residence.

were remodeled into multi-family structures. All residential buildings remodeled during this period (98) constituted 2 per cent of the 5,832 structures available in 1934; the result was an increase in dwelling units, since the remodeled buildings provided for 746 families (Table II), compared with the previous capacity of about 200 families. However, the new housing created was not of the low-rental type. Over three-fourths of the buildings renovated were in the west area, a section of relatively high-priced housing, and they produced 84 per cent of the added units.

In contrast to the remodeled structures, which were largely concentrated in the west area, the demolished buildings were located primarily in the east area. From 1934 through November, 1941, a total of 168 buildings containing 1,575 dwelling units was demolished in Yorkville, about 3 per cent of the total housing structures and dwelling units available in 1934 (Table III).

New housing construction in Yorkville between 1934 and 1941 was of the high-rental, multi-family type. The 48 new buildings constituted an increase of less than 1 per cent of the 5832 buildings inventoried in 1934, but this was an increase of almost 6 per cent in the total number of dwelling

units. These new accommodations provided for 3,099 families and cost almost \$18,000,000 (Table IV).

TABLE II. STRUCTURES REMODELED INTO CLASS A DWELLINGS IN YORKVILLE, BY THE NUMBER OF DWELLING UNITS, 1934-41*

AREA	Number of	
	Structures	Dwelling units
Total Yorkville	98 ^a	746
East area	20	122
Health area 44	1	20
Health area 43	2	9
Health area 42	10	66
Health area 38	3	10
Health area 37	4	17
West area	78	624
Health area 41	48	414
Health area 36	30	210

* Source: Records of the Department of Housing and Buildings, New York City. A class A dwelling is one that is used for permanent, rather than temporary residential purposes.

(a) Only 9 of the total were originally multi-family structures; 7 were located in the west area and 2 in the east area.

A marked contrast existed in the cost of construction per dwelling unit in the east and west areas; in the former this figure was \$3,100 and in the latter it averaged \$7,800. This is one indication of the disparity in economic levels prevailing in the two areas. It should be emphasized, however, that in both areas the dwelling units provided in the new structures presuppose tenants with much higher income levels than those of the families displaced.

Non-Residential Structures

Transient Hotels and Rooming and Lodging Houses. According to the 1940 Census, accommodations for transients were not included in the definition of a dwelling unit. As a result, transient hotels and rooming houses fell into a non-residential classification.

Yorkville is not characteristically a transient hotel section; in 1934 it had only 7 hotels of which 5 were in the west area. In 1942 the number of hotels had increased to 16. With the exception of the East End Hotel (a residence for working girls), all of these were located in the west area.

Contrary to the usual pattern according to which present rooming houses were for-

merly the homes of the well-to-do but are now a part of areas undergoing a transition from residence to business, the rooming houses in Yorkville are largely reconditioned old-law tenements. In 1934 almost three-fourths of the 176 rooming and lodging houses were situated in the east area. More than half of them (106) were found between Third and First Avenues and between Seventy-fourth and Eighty-fourth Streets. From 1934 through 1941, 31 buildings—which had accommodated 162 families—were remodeled into rooming or lodging houses. The majority of these buildings (26), located in the east area, had formerly been small apartment houses.

Age of Structures. According to the 1940 Census, almost one-half of the dwelling units in Yorkville were located in structures

CHART 2. AVERAGE AND MEDIAN CONTRACT MONTHLY RENTAL IN DOLLARS FOR TENANT-OCCUPIED UNITS, HEALTH AREAS, YORKVILLE, 1940*



TABLE III. DEMOLITIONS IN YORKVILLE, CLASSIFIED BY NUMBER OF STRUCTURES AND DWELLING UNITS, 1934-1941*

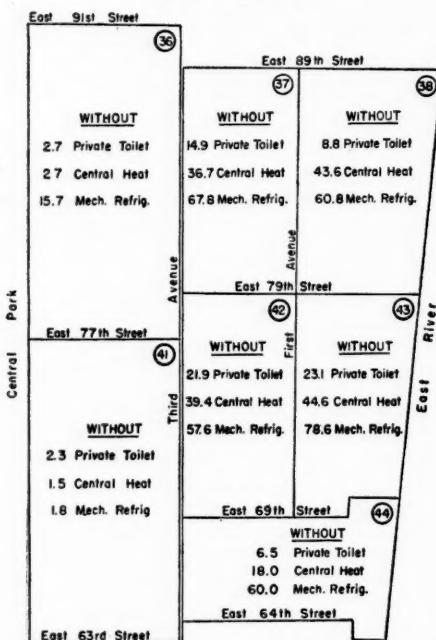
AREA	Number of	
	Structures	Dwelling Units
Total Yorkville	168	1,575
East area	121	1,279
Health area 44	8	60
Health area 43	33	443
Health area 42	54	510
Health area 38	10	101
Health area 37	16	165
West area	47	296
Health area 41	7	24
Health area 36	40	272

* Source: Records of the Department of Housing and Buildings, New York City.

* Code: Health areas: upper right-hand numbers. Lower numbers in each health area indicate the number of tenant-occupied units reporting.

Source: 16th Census of the United States, *Population and Housing: Statistics for Health Areas, New York City*.

CHART 3. PERCENTAGE OF OCCUPIED DWELLING UNITS WITHOUT ESSENTIAL FACILITIES, HEALTH AREAS, YORKVILLE, 1940*



* Code: Health area number; upper right-hand corner.

Source: 16th Census of the United States, *Population and Housing: Statistics for Health Areas, New York City*.

which were more than 40 years old. In the east area more than one out of two were in old structures whereas in the west area the ratio was about one out of five.

Condition of Structures. Instructions to the 1940 Census enumerators specified that dwellings to be described as needing major repairs were those in which the floors, roof, plaster, walls, or foundations were in such condition that continued neglect would impair the soundness of the structure and create a hazard to safety.³ Eighty-one per cent of the dwelling units in Yorkville were classified as "not needing major repairs," 4 per cent as "needing major repairs," and 15 per cent as "not reporting." This means that, in 1940, a substantial majority of the

* 16th Census of the United States, *Population and Housing: Statistics for Health Areas, New York City*, Washington, 1942, p. 3.

structures conformed to the minimum maintenance requirements, as defined above.

Persons Housed Per Net Acre. Family accommodations are not equally distributed in the two sections of Yorkville. In 1940 housing was available for 38,500 families (104,755 persons) in the east area and for 17,987 families (59,131 persons) in the west area. In terms of population density, these data are significant only if related to the number of net acres in the two sections.⁴ "In a given area of moderate size, four hundred to five hundred persons per (net) acre can be satisfactorily housed, leaving adequate space for light, air, sunshine and recreational facilities."⁵ In Yorkville the east area contains about 284 and the west area about 220 net acres. In terms of the 104,755 individuals living in the east area in 1940, population density for this section was 369 persons per net acre; in the same year the 59,131 individuals living in the west area resulted in a population density of 269 per-

TABLE IV. CONSTRUCTION IN YORKVILLE, STRUCTURES, DWELLING UNITS AND COST, 1934-1941*

AREA	Number of		Cost in \$000
	Structures	Dwelling units	
Total Yorkville	48	3,099	17,740
East area	20	1,323	3,995
Health area 44	2	102	335
Health area 43	7	636	1,500
Health area 42	6	397	1,685
Health area 38	3	103	300
Health area 37	2	83	175
West area	28	1,776	13,745
Health area 41	16	1,165	9,515
Health area 36	12	611	4,230

* Source: Records of the Department of Housing and Buildings, New York City.

⁴ Net acreage is obtained by deducting from gross acreage the space necessary for streets.

⁵ James Ford, *Slums and Housing* (Cambridge, Mass.: Harvard University Press, 1936), p. 952.

TABLE V. PERSONS PER ROOM, ALL OCCUPIED DWELLING UNITS, YORKVILLE, 1940*

PERSONS PER ROOM	Total Yorkville		East area		West area	
	Number	Per cent	Number	Per cent	Number	Per cent
	50,892	100.0	35,103	100.0	15,789	100.0
0.50 or less	15,836	31.2	9,702	27.6	6,134	38.9
0.51 to 0.75	14,641	28.8	10,011	28.5	4,630	29.3
0.76 to 1.00	14,174	27.8	10,179	29.0	3,995	25.3
1.01 to 1.50	4,028	8.0	3,508	10.0	520	3.3
1.51 to 2.00	1,311	2.5	1,054	3.0	257	1.6
2.01 or more	184	.3	148	.4	36	.2
Not reporting	718	1.4	501	1.4	217	1.4

* Source: 16th Census of the United States, *Population and Housing: Statistics for Health Areas, New York City, Washington, 1942.*

sons per net acre. Thus, according to the standard of 400 to 500 persons per net acre, the Yorkville averages do not represent overcrowding.

To ascertain the extent to which an area is overcrowded, however, a number of factors in addition to population density should be considered. These include the plan of the building in relation to the site, the number of stories in the structure, and the size of the dwelling units. In other words, high density resulting from a well-planned elevator building of seven or eight stories which covers up to 50 per cent of the lot area may result in less congestion than a poorly-planned, five-story, non-elevator structure, built to cover 70 per cent or more of the lot area and accommodating fewer tenants than the elevator building. In the east area of Yorkville the majority of the housing structures are over forty years of age. These cover a large proportion of the total lot area with 369 persons to the net acre.

Persons Per Room. Although one person per room is a generally-accepted standard in housing,⁶ conclusions as to the adequacy of housing space on this basis are subject to

question. Such additional factors as the size of the room, the amount of window space and the accessibility of sunlight are significant in determining the quality of the housing accommodations. A somewhat better measurement is in terms of the number of cubic feet of air per person.⁷ However, since these data are not available for Yorkville, an estimate of the extent of sub-standard housing will have to be made on a persons-per-room basis.

In Yorkville as a whole in 1940 only about 12 per cent of the family quarters were occupied by more than one person per room (Table V). In the east area 15 per cent, and in the west area only 6.5 per cent, of the families were crowded beyond this point. These data ignore the fact that a large proportion of the buildings, particularly in the east area, are old-law tenements having small rooms which lack access to air and sunlight. Consequently, the extent of overcrowding in Yorkville is undoubtedly much greater than the figures indicate.

Rentals. Rentals are markedly higher in the west than in the east area of Yorkville. The two health areas located west of Third

⁶ "Units classified as 'crowded' include 1 to 2 persons per room, 'overcrowded' 2 to 3 persons per room, and 'greatly overcrowded' over 3 persons per room." E. E. Wood, *Slums and Blighted Areas in the United States*, Federal Emergency Administration of Public Works, Housing Division Bulletin 1, 1935, p. 83.

⁷ The following requirements of the New York State Multiple Dwelling Law are minima: "No room in any multiple dwelling shall be so overcrowded that there shall be afforded less than 400 cubic feet of air to each adult, and 200 cubic feet of air to each child under twelve years of age occupying such rooms." *Multiple Dwelling Law, New York State, 1929*, as amended, p. 36.

Avenue had average monthly rentals in 1940 of \$142 and \$177, which indicated a predominance of families of high income. In contrast, for the five health areas located east of Third Avenue average rentals ranged from \$26 (health area 43) to \$42 (health areas 38 and 42). (Chart 2)

More than half of the tenant families in the east area in 1940 paid less than \$30.00 per month; in contrast, only 5 per cent of the housing accommodations were rented for this figure in the west area. Edith Elmer Wood pointed out in 1935 that virtually all monthly rentals under \$30.00 in New York City connoted sub-standard housing.⁸ Naturally, this generalization does not apply to rentals for one- or two-room apartments; even in Manhattan rentals under \$30 a month will sometimes provide good housing in small quarters. The 1940 Census did not publish data on the number of rooms per dwelling unit for small local areas. However, figures from the Real Property Inventory of 1934 indicated that about two-thirds of the families in Yorkville had rental accommodations of four rooms or more and two-fifths of them had accommodations of five rooms or more. These data, when correlated with the 1940 rentals, indicate that Yorkville families paying less than \$30 a month were living for the most part in sub-standard housing accommodations. Even a superficial investigation of dwelling units currently available at this figure would substantiate this conclusion.

⁸ E. E. Wood, *op. cit.*, p. 3.

Housing Conveniences. Consistent with the contrast in rentals between the east and west areas of Yorkville is the provision for housing conveniences. In the west area, in 1940, less than 3 per cent of the dwelling units were without private flush toilets and without central heat (Chart 3). In contrast, in the east area the proportion of those without private flush toilets ranged from almost 7 per cent (in health area 44) to 22 per cent (in health area 42). In this section, also, lack of central heat was much more marked; the percentages ranged from 18 per cent (in health area 44) to 45 per cent (in health area 43). The sections east and west of Third Avenue also showed wide differences in the provision for mechanical refrigeration. In the west area less than one-sixth and in the east area about two-thirds of the dwelling units were without this convenience.

Although still leaving much to be desired, these figures show that marked improvements have occurred since 1934 in the prevalence of both mechanical refrigeration and private flush toilets.⁹ The former may be explained by the rapid expansion of the industry producing mechanical refrigerators and their general acceptance by the public. The explanation of the latter is much more specific; the increase in private flush toilets was directly attributable to the enforcement

⁹ In 1934 more than one-third of the occupied family dwellings east of Third Avenue had no private flush toilet and about seven families in eight lacked mechanical refrigeration.

TABLE VI. COMPARISON BY NUMBER AND PER CENT OF VACANT DWELLINGS
WITH TOTAL NUMBER DWELLINGS IN YORKVILLE, EAST AND WEST AREAS,
1934: 1940.

AREA	1934			1940		
	Total	Vacant	Per cent	Total	Vacant	Per cent
Total Yorkville	55,884	8,363	15.0	56,487	5,085	9.0
East area	40,134	6,471	16.2	38,500	3,296	8.6
West area	15,750	1,892	12.0	17,987	1,789	9.9

^{*} Source: 16th Census of the United States, *Population and Housing: Statistics for Health Areas, New York City*, Washington, 1942.

of the New York State Multiple Dwelling Law¹⁰ requiring fire retarding of basements and public halls and the provision of one indoor toilet accommodation per family. Beginning with January, 1940, the Mayor's Committee on Property Improvement put pressure on landlords to correct violations. As an incentive to compliance, landlords were enabled to secure ten-year bank loans for property improvement at low interest rates (4 per cent) if they agreed to correct all violations on record with the New York City Department of Housing and Buildings. The result has been a marked increase in private toilet accommodations.¹¹

Vacancies. Considerably fewer vacancies existed in Yorkville in 1940 than in 1934; the rates were 9 per cent and 15 per cent respectively (Table VI). The high vacancy rate of 1934 has been attributed to a number of factors. The most significant of these was the general population exodus after 1920 from Manhattan.¹² Between 1920 and 1930 Yorkville's population shrinkage was more than 20 per cent¹³ and was attributable to a movement from this section to Queens and the other outlying boroughs of New York City. Other factors were the "doubling up" of families and migration from urban to rural areas—both a result of the depression.

The lower vacancy rate in 1940 reflected economic and social changes after 1934. The establishment of relatively large local relief rolls and federal work relief projects plus

a revival of business activity resulted in the "undoubling" of families; increased marriages and the return to the city of persons who had moved to rural areas during the worst years of the depression were responsible for population growth. Between 1930 and 1940 Yorkville enjoyed a population increase of 3 per cent (4,373 persons).

Another factor (mentioned previously) which contributed to the lower vacancy rate in 1940 was the enforcement of the fire-retardation and toilet-accommodation provisions of the Multiple Dwelling Law. In some instances, owners of old dwellings found it unprofitable to make these improvements and instead demolished the buildings;¹⁴ in other cases the structures were completely remodeled and the resulting modern accommodations rented at current market rates. In both these instances the net result was relatively fewer dwelling units available at low rentals in 1940 than in 1934, which effected a low vacancy rate in this type of accommodation.

From the above analysis it is evident that in both the west and the east areas of Yorkville the housing construction of the past has been dictated by the desires of the individual promoter. In the east area primarily, the results have been land overcrowding, substandard housing, and congestion. Low-income families are now living in this substandard housing; no new dwelling units have been made available for this group. With present housing construction stopped, other than for war purposes, there is no immediate solution to this problem nor to that of community-planned housing for families who can afford to pay commercial rentals. Nevertheless, the question is now pertinent: in the post-war world are the

¹⁰ This amendment, passed by the New York State Legislature in 1934, became effective on January 1, 1936. The approximate cost of compliance ranges from \$2,500 to \$6,000 for typical old-law tenements.

¹¹ The effect on the extent of fire retardation has been even more marked. In January, 1942, only twelve structures, comprising 126 dwelling units, all in the east area, remained without fire retarding. Undoubtedly, the fact that (since January 1, 1936) an owner who does not comply with the fire retarding provisions of the Multiple Dwelling Law may be held criminally responsible, should a fire occur resulting in loss of life, has contributed materially to the wide-scale compliance with the law.

¹² Between 1920 and 1930 Manhattan lost about 18 per cent of its population, or over 400,000 people.

¹³ Yorkville's population in 1920 was 201,704 persons; by 1930 this number had been reduced to 159,513.

¹⁴ In the east area of Yorkville between 1934 and 1940 there was a reduction of 1,661 in the number of dwelling units available; simultaneously, there was an increase in families (4,066 in the decade 1930-1940); together, these two factors were responsible for a reduction in the vacancy rate. In contrast, in the west area between 1934 and 1940 there was an increase of 2,208 dwelling units. The number of families, however, also increased (3,339 in the decade 1930-1940); the result for this section also was a reduction in the vacancy rate for 1940.

types of housing accommodations available, not only to the poor but to all income groups, to continue to be dictated solely by the policies of laissez-faire or does the future hold some more enlightened program for Yorkville?

(The authors wish to express appreciation to the Hunter College students who worked on this project in its initial stages and in particular to Lenore

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Maryland's Forest Conservation Law

FREE simple property is tenaciously protected as one of the fundamental precepts of our democracy. Changes in the structure of property rights for the benefit of both individuals and society are difficult to make, although it may be obvious that significant benefits would accrue to both. This condition is particularly true of the eastern states. Portions of the West have not been so imbedded in orthodox procedures, and have been more willing to accept modifications in government and property rights as new conditions have made them desirable.

The recent Forest Conservation legislation enacted by the 1943 assembly of the Maryland Legislature¹ breaks a long-held precedent for this section of the country. Although certain other eastern states, notably Virginia and New Hampshire, have enacted measures for encouraging forest production and conservation, the Maryland law may be accorded considerable distinction. It does more than set forth policies for the conservation of forest resources. Well-defined policies are placed in the hands of an organization which has no other function than to administer them at the local level.

Section 53 of this Statute states that it is the policy of the state of Maryland to "encourage economic management and scientific development of its forest and woodlands to maintain, conserve, and improve the soil resources . . . to the end that an adequate source of forest products be preserved for the people." Joint benefits of forest cover are recognized. "Where such interests can be served through cooperative efforts of private forest land owners, with the assistance of the State, it is declared to be the policy of the State to encourage . . . the fullest economic development of . . . privately owned forest lands. Conversely, where the public

interests . . . cannot be served and adequately protected under private ownership, it is the declared policy of the State to acquire control and title to such lands as rapidly as financial resources . . . will permit."

Sections 55 and 56 assign the over-all administrative authority to the State Forests and Parks Commission and require the commission to "maintain such inspection of forest management practice as may be necessary to make this subtitle effective and to enforce rules adopted and approved by the Commission." Thus it is apparent that a number of sticks are removed from the bundle of fee simple private property rights.

Provision is made (Section 57) for the division of the state into forest conservation districts, "having due regard for the character and extent of the timber stand, similarity of forest problems, the convenience of administration and other pertinent factors." District forestry boards of not less than five members are to be appointed by the commission. These boards are to "include a person representing each of the major types of forestry and woodworking interests and at least one person representing farm woodland owners, preferably a person connected with the County Farm Bureau or Grange, in each district." Provision is made for the assignment of a district forester to each district to serve as executive officer of the board in addition to his duties as a technician. His salary is to be paid by the state.

In addition to numerous educational and service responsibilities (Section 58), the district board is authorized to "receive and pass on proposed work plans for the cutting of forest lands." Accordingly, the board is given the right to enter upon any woodland, to enter into agreements with land owners, to cooperate with other agencies, to develop forest management plans, and to enforce all rules and regulations authorized by the commission (Section 59).

¹ Annotated Code of Maryland, 1939 edition, Article 39-A, Sects. 53 to 64, incl.

Rules and regulations governing the utilization of forest lands are to be developed by the district boards. After wide publication and public hearings, they are submitted to the state commission. If approved by the commission they shall have the force of law. This procedure, and the execution and enforcement thereof, is similar to that of other types of district organization, particularly that of soil conservation districts.

All sawmills and other wood-processing plants are to be licensed and changes in location or the establishment of new mills are to be reported to the commission. Before cutting woodlands, owners and lessees are required to make application for approval of the cutting plans. Approval depends on the provisions for (1) leaving conditions favorable for regrowth; (2) protecting young trees; (3) restocking land which is clear cut; and (4) maintaining adequate growing inventories on land suitable for sustained yield production. The law specifically provides that cutting plans are to be approved only after an examination, by qualified inspectors, of the woodland to be cut.

The original bill provided a schedule of minimum stands, in terms of the number of trees of three diameter classes, that were to be left by cutters of the several forest types. Final revision, however, deleted this detail, leaving the district boards to designate the minimum growing inventories to be left. A legal requirement of an exact number of trees obviously would be impracticable for general application.

In passing this legislation the state of Maryland is concerned particularly with the severe exploitation of woodlands for mine timber in the western part of the state and the heavy cutting of all timber by "scavenger" portable mills throughout the state.

War-time demands for wood have stimulated the cutting of all types of wood products, but until this legislation was enacted there was no way to check the careless destruction of growing stock.

Section 61 excepts the cutting of firewood and timber for domestic use from the provisions of the Act. Section 63, likewise, makes an exception for the clearing of woodlands for utility services, military use, industrial and residential sites, and for agriculture. The total exclusion of forest clearing for agriculture from the provisions of this Act may leave a loophole for undesirable forest destruction, particularly on land unsuited to agriculture.

Although the provisions of this legislation may seem to represent rather stringent restrictions on private property, they are not unreasonable in view of the circumstances. Since a large part of the policy is to be formed at the local level, according to the needs of specific forest types, the law should be of fundamental assistance to long-time private forest production. It will be encumbent on the State Commission of Forests and Parks to expedite the handling of applications and plans for cutting in order that the administrative procedure does not bog down. Furthermore, it is essential that private, or short-time, interests be accorded reasonable consideration in developing and approving specific procedures and work plans. Otherwise, pressure may be brought to bear which would result in future legislation nullifying the essential elements of the present statute.

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Recent Utility Activities

THE reduction in freight rates ordered by the I.C.C. on April 12, 1943 was probably the most significant utility action in 1943, primarily because it indicates the influence which O.P.A. may have upon regulatory bodies. The reduction removed the increases of approximately six per cent granted early in 1942, on the grounds that revenues now will be sufficient to pay wage increases granted by the railroads at that time and also other more recent cost changes. Passenger rates, long considered as not sufficient to pay their proper share of railway expenses, were not reduced from the ten per cent increase granted in 1942. The present order was to be effective until January 1, 1944.

Whether the I.C.C. was influenced by the President's Executive Order of April 8 cannot be stated, but that order indicates the administration's attitude toward the utility industries even though the order adds nothing new to the Economic Stabilization Act of October 2, 1942. The President's order is as follows:

"The attention of all agencies of the Federal Government, and of all state and municipal authorities, concerned with the rates of common carriers or other public utilities, is directed to the stabilization program of which this order is a part so that rate increases will be disapproved and rate reductions effected, consistently with the act of October 2, 1942 and other applicable Federal, state, or municipal laws, in order to keep down the cost of living and effectuate the purposes of the stabilization program."

O.P.A. and Gas-Electric Rates

The *Washington Gas Light Co.* on November 16, 1942 was allowed a \$200,000 increase in rates under the sliding scale agreement with the District of Columbia Commission. O.P.A. contested the right of the commission to reject government evidence on the inflationary aspects of the rate increases and the rate base employed.¹ The

¹ *Journal of Land & Public Utility Economics*, February, 1943, p. 104.

Federal District Court of the District of Columbia on February 1, 1943 held that the commission must admit government evidence. In the face of the Act of October 2, 1942 a sliding scale agreement was held not to be a contract which "binds the public," and it must give way to public policy as voiced by Congress. The Supreme Court of the United States has since agreed to receive an appeal from this decision.

O.P.A., at the request of the Detroit city council, filed a brief with the *Michigan Public Service Commission* in April asking for a reduction of \$8,000,000 per year in electrical rates in Detroit. It was claimed that the company has paid \$8,000,000 in excess profits taxes during the past year, and that such taxes cannot be allowed as necessary operating expenses. O.P.A. also claimed that rates based upon reproduction cost are unsound and inflationary and that original cost should be used. Just how a reduction in the rates charged by an electric utility which has had no rate increases since the war began and which is now paying taxes equal to the requested reduction is to be anti-inflationary is not easy to see. If rates are reduced by the requested amount, funds now going to the government will be distributed to consumers who will have that much additional to spend on limited goods and services, unless taxed away from them, and therefore the reduction might become more inflationary. Indirectly, of course, if the cost of living is reduced by a reduction in electric rates, it can result in less pressure for increased wages.

Telephone and Telegraph Mergers

Telephones. The last important example of direct competition between two telephone companies in the same city gasped and then expired on March 16, 1943. On that date the F.C.C. made final the authorization for the *Bell Telephone Company of Pennsyl-*

vania to acquire the properties of the Keystone Telephone System in Philadelphia, and for the *New Jersey Bell Telephone Company* to acquire the properties of Eastern Telephone & Telegraph Company and Camden & Atlantic Telephone Company. The latter two companies were owned by Keystone and operated in Camden, New Jersey and surrounding territory.

Keystone was organized in 1900 and has served the area continuously since that time. It operated about 50,000 telephones from eight exchanges in Philadelphia, most of which were business rather than residential phones. Many business houses used the Keystone service for inter-business calls because their rates were below the Bell rates, and Keystone offered certain services to business houses not offered by the Bell Company. The Keystone Company offered an unlimited flat rate of \$9 per month for a single-party business phone, or a measured rate of \$5 per month with all calls beyond 100 at an additional rate of 3c per call. The Bell Company offers no flat rate service. Their single-party business rates have been \$5 per month with 75 calls, and additional calls at 4c or 3c, depending on the number placed.

Many of those interested in telephone development will realize that this closes a chapter in American utility history which began in 1895 after the basic Bell patents expired and the strong period of telephone competition got under way.

Telegraph. Another competitive situation which has come to an end is found in the telegraph industry. Legislation to allow the merger of the Western Union and the Postal Telegraph was signed by the President on March 8, 1943. The F.C.C. then appointed a committee of three and a staff of experts to keep informed about any developments between the two companies relative to the formation of merger plans. Such a plan was approved by F.C.C. on September 27, 1943 and is now in process of execution.

*Federal Regulation of
Electric Utilities*

Federal regulation of what would nor-

mally be thought of as intrastate utility company operations was expanded in a broad interpretation of interstate commerce by the United States Supreme Court on May 3, 1943.²

In endeavoring to regulate certain security transactions of the *Jersey Central Power & Light Company* (as provided for in the Public Utility Act of 1935) the question arose as to whether the Jersey Central, a company generating electric power and selling it all to buyers within the state, was a utility engaged in interstate commerce and thereby subject to the act.

The Supreme Court held that the company is engaged in interstate commerce and subject to certain regulations by the Federal Power Commission. The following facts were interpreted as constituting the basis for interstate commerce. The Jersey Central connects with and sells power to another company (Public Service Electric & Gas) within the state. The latter company, however, connects with and exchanges some power with a New York company. It therefore develops that a small amount of the power generated by Jersey Central may be transmitted to New York by the company which buys from Jersey Central. (The connection is kept by the New York and New Jersey companies primarily as a guard against breakdowns.) Therefore the Court concludes that facilities of Jersey Central are used for transmission in interstate commerce regardless of the fact that an intervening company is involved before power leaves the state.

Justice Roberts wrote a dissent, concurred in by Justice Frankfurter and Chief Justice Stone, stating that "both the language of the Act and the legislative history show that Congress did not intend to regulate matters affecting commerce, as well as commerce itself."

² 11 Law Week 4339 (5-4-43).

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Public Utility Financing in the Third Quarter of 1943

PUBLIC utility security offerings in the third quarter of 1943 totaled \$114 millions. The volume in this quarter is greater than in either the first or the second quarter. The last quarter to exceed this total was the first quarter of 1942, when the volume reached \$195 millions. The average volume of the third quarter for the three previous years is \$269 millions, an indication that utility financing remains at a relatively low level.

The publicly-sold, long-term debt issues account for 91% of the total volume. These issues are analyzed in Table I. The largest issue is the *Northern Indiana Public Service Company's* \$45,000,000 First Mortgage, Series C, 3 1/8% issue, maturing in 1973. This issue was sold at 102.88% of par to yield 2.98%. The net cost to the company was 3.06%. There were five publicly-sold issues in all and the weighted average yield was 3.03%. This quarter's average is about

the same as average yields in 1940 and 1941. Underwriters' commissions averaged 1.06% and expenses .61%. These averages are also favorable.

There were only two relatively small long-term debt issues offered privately in this quarter. These issues are shown in Table II. This quarter's total represents the smallest volume of privately offered long-term debt issues offered since this series started in 1936. The proportion of long-term debt issues sold privately has decreased in 1942 and 1943 but the relatively low total volume makes it unsafe to emphasize this trend.

Issues with serial maturities offered in the third quarter are listed as follows:

\$4,000,000 Railway Equipment and Realty Co., Ltd. 3 3/4%,
First mortgage serial bonds due 1944-1958. Sold privately at par.
1,500,000 Arkansas Louisiana Gas. Co. 3 1/2% series D,

TABLE I. SUMMARY AND ANALYSIS OF PUBLIC UTILITY LONG-TERM DEBT ISSUES OFFERED PUBLICLY, THIRD QUARTER, 1943

Company & Issue (A)	Cou- pon Rate (B)	Principal Amount (C)	Maturity Date (D)	Month of Offering (E)	Offering Price (F)	Offering Yield (G)	Under- writers' Commis- sions (H)	Pro- ceeds to Com- pany (I)	Esti- mated Inci- dental Ex- penses (J)	Net Pro- ceeds (K)	Cost to Com- pany (L)
South Carolina Electric & Gas Co. First Mortgage	3 1/8	\$20,000,000	1973	July	104.21	3.40	1.12	103.09	.75	102.34	3.49
Northern Indiana Public Service Co. First Mortgage, Series C	3 1/8	45,000,000	1973	Aug.	102.88	2.98	1.16	101.72	.50	101.22	3.06
Iowa Power & Light Co. First Mortgage	3 1/4	17,000,000	1973	Sept.	108.50	2.83	.94	107.56	.80*	106.76	2.91
Pennsylvania Electric Co. First Mortgage	3 1/8	4,000,000	1973	Sept.	106.50	2.80	.92	105.58	.96	104.62	2.89
West Texas Utilities Co. First Mortgage	3 1/8	18,000,000	1973	Sept.	102.46	3.00	.86	101.60	.47	101.13	3.07
Total or Weighted Average	—	\$104,000,000	—	—	104.12	3.03	1.06	103.06	.61	102.45	3.11

* Estimated by authors.

TABLE II. SUMMARY AND ANALYSIS OF PUBLIC UTILITY LONG-TERM DEBT ISSUES OFFERED PRIVATELY, THIRD QUARTER, 1943

Company & Issue (A)	Coupon Rate (B)	Principal Amount (C)	Maturity Date (D)	Month of Offering (E)	Offering Price (F)	Offering Yield (G)
Rio Grande Valley Gas Co. First Mortgage, Series B	4	87,000	1961	July	100.00	4.00
Robland Gas. Co. Series A Bond	4	400,000	1963	July	100.25	3.98
Total or Weighted Average	—	487,000	—	—	100.21	3.98

First mortgage serial bonds due 1948-1953. Sold privately at par.
 500,000 Arkansas Louisiana Gas Co. 2½% series C, First mortgage serial bonds due 1945-1947. Sold privately at par.
 500,000 Pennsylvania Electric Co., 2½% serial notes due serially to 1948. Sold privately.
 \$6,500,000

One issue of preferred stock was offered during the third quarter, a 4.4% issue of the *Pennsylvania Electric Company* priced at \$105.25 per share to yield 4.18%. Total par value offered was \$3,500,000. The appearance of preferred stock issues, one in the second quarter and one in the third quarter of this year, is interesting as there has been a complete absence of these issues in

the last quarter of 1942 and the first quarter of 1943. Section 26 (h) of the Internal Revenue Code provides that dividends of public utility preferred stock issues subsequent to October 1, 1942 are not available as a credit for corporation surtax purposes. This fact may have caused the almost complete cessation of preferred stock offerings which has taken place in recent quarters.

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Book Review Department



A Farm Electrification Programme. Report of Manitoba Electrification Enquiry Commission, 1942. Winnipeg: James L. Cowie, King's Printer for Manitoba, 1943. pp. xii, 211.

Those interested especially in rural electrification and post-war planning will find this report a valuable study. The report contains an intelligent analysis of the economics of electrifying western farms which are still devoted largely to extensive grain crops. At the same time it illustrates praiseworthy forward-planning of post-war public works under the impetus of government officials who, in sponsoring this project, give evidence of concern for the mutual economic welfare of rural inhabitants and city dwellers. Although deficient in a few respects, as hereafter noted, the commission on the whole has presented a comprehensive, frank picture of the task.

The investigation was broadly conceived and quickly accomplished. The instructions to the commission embraced two chief problems: (1) the formulation of "a practicable policy for the expansion of the Manitoba hydro-electric system to serve as large a proportion of Manitoba farmers as possible" as part of a post-war program to provide employment; and (2) an investigation of the present system of electrical supply,

"... in order to ascertain whether economies cannot be effected by its reorganization which will enable the Manitoba Government to make available to Manitoba farmers a supply of electrical energy at a substantial reduction in its present cost without at the same time increasing the rates for such electricity to any citizen of Manitoba."

The investigation was begun in June, 1942 and completed in December. It is interesting that Premier Bracken invited an American (Emerson P. Schmidt of the University of Minnesota) to serve as chairman.

Almost the entire report deals with the first problem. Reorganization of existing systems is deferred—with only a summary, inconclusive finding. That finding was that substantial savings could be realized only by eliminating duplications of property and operating staffs of the three major utilities—Winnipeg Electric Company, City of Winnipeg Hydro Electric System, and the Manitoba Power Commission. To accomplish this required negotiations with the utilities which the Enquiry Commission was not empowered to conduct.

The instructions apparently contain two somewhat conflicting standards for dealing with the first problem. Expansion was to reach "as large a proportion of Manitoba farmers as possible." Note the word "possible," not "feasible." Yet the expansion plan must be "practicable," which may connote "feasibility" or it may refer to the other main principle of not "increasing the rates for such electricity to any citizen of Manitoba." Presumably the direction might be paraphrased—devise a workable plan for building rural electric lines to reach as many farms as possible without increasing existing electric rates to either farmers or city dwellers.

This reviewer likes the practice of stating the findings and recommendations of the commission in Chapter 1, in view of the length of such a report as this. Here, in brief compass, the reader gets a panorama of the proposed program. In summary, the commission proposes a minimum initial program of electrifying, in the first 10 years after the war, 25,000 of the Province's 53,000 farms considered within reach of electric lines at an estimated total capital cost of approximately \$16,830,000 (at 1939 prices) with 80 per cent of possible farm services connected to the line. On this basis the capital cost per farm is estimated at \$673. To supply these farms at the same rate schedule now applicable in town and villages (first 50 kwh at 8 cents each, excess at 2 cents each, with 10 per cent discount for prompt payment but with a minimum

net bill of \$3.60 a month for farm service) will require a bonus of \$21 per farm per annum, which is more than the present provincial water power rentals under the terms of existing water power leases. If the bonus requirements are not furnished from these rentals or other sources of provincial revenues, electric rates would have to be increased. These results are attainable only if capital funds are secured at an interest cost not exceeding 3.5 per cent, with amortization of debt in 25 years.

For public utility economists, the gist of the report is found in Chapters 9, 10, 12 and 13. After the first chapter summarizing the findings and recommendations, the next seven chapters provide the background and setting of the problem. The chapter headings sufficiently indicate the scope and intent: Manitoba's Economy, The Advantages of a Diversified Economy, The Advantages of Electric Power on the Farm, Post-war Employment and Farm Electrification, The Progress of Farm Electrification, Do Farmers Want Electric Power, and Promoting the Use of Electricity on the Farm. In these chapters one learns that only 1100 farmers now receive central station electric service, the predominant portion of which is supplied by the Manitoba Power Commission and Winnipeg Electric Company.

Chapter 9 gives many of the detailed figures and assumptions upon which the commission's conclusions were based. It is interesting to note that calculations are made on two price bases (1939 and 1942 prices) and two saturation bases (60 per cent and 80 per cent saturation). The estimated capital cost at 1942 prices with 60 per cent of the farms along the line connected is \$798, compared with \$673 on the most favorable bases assumed. These costs are based on an average length of farm line (including service line) of .73 miles for 80 per cent saturation and .85 miles for 60 per cent saturation. The line design is single-phase, 4600 volts, using western red cedar poles with average spacing of 310 feet. The costs include a farmyard service pole, a 3 kva transformer, protective equipment, and a meter. Some additional rural network cost is included but apparently no allocation is made of existing network investment unless it is included in the "share of network costs" referred to be-

low. Interest is taken at 3.5 per cent, amortization in 25 years on a sinking fund basis is taken at 2.75 per cent, and the total capital charge of 6.25 per cent is reduced one-half since the present policy of the Province is to give financial aid to such projects to the extent of interest and sinking fund on half the capital.

Energy costs are taken at the average of 3.63 mills per kilowatt-hour for 1941 at Winnipeg. Assuming energy losses of 50 per cent from point of purchase to point of delivery at the farm, the approximate cost of energy at the farm is estimated at 7.5 mills per kilowatt-hour. When these energy costs are added to the constant costs, the total costs per farm per month are estimated to range from \$3.95 for 50 kwh—assuming 80 per cent saturation and 1939 prices—to \$4.82 for 100 kwh—assuming 60 per cent saturation and 1942 prices.

Included among the constant expenses is an item of 62 cents per month for a "share of network costs," based on an average demand of 600 watts per farm. This is equivalent to \$12.40 per kilowatt of farm demand per year. This item appears to be a prorate, not an out-of-pocket expense. Later, when monthly revenues at the recommended rate schedule are compared with monthly costs, this item is shown separately and apparently treated as an offset to deficiencies of revenues, being described as "saving by coordination with Manitoba Power Commission."

In three appendices to Chapter 9 and in the remaining key chapters of the report, the matters of chief interest to the reviewer were these: (1) The appendices give considerable information not usually found in connection with farm electrification surveys, with respect both to Manitoba farms and to the experience of REA cooperatives in Minnesota and North Dakota. (2) The commission rightly points out that the high cost of appliances is the greatest handicap to complete utilization of electricity on the farm and therefore proposes that the government, as agent, arrange for manufacturers to offer consumers three "standard" packages of wiring and equipment. (3) Provincial receipts from water power rentals being insufficient to provide the assumed bonus, state aid must either be met out of other provincial revenues or farm electric rates

must be materially increased. (4) Where central station service cannot feasibly be made available, limited electric service can be obtained from wind or gasoline-driven units; but experience of farmers in this territory shows costs of such service to be high and service unsatisfactory and limited.

To the reviewer, the principal deficiencies of the report are these: (1) Depreciation as a cost is omitted entirely because, it is stated, the amortization period of 25 years will be less than the average life of the property. Theoretically, this sounds plausible but practically, every unit of property will not have a life in service as long as the average. Such "infant mortality" requires that the enterprise provide funds for replacement of units before average life has expired. When amortization provisions are committed to debt retirement, the enterprise must find such funds in other sources of revenues—by piecemeal new borrowing as replacements are required or by providing an extra cushion in allowances for maintenance. If the latter alternative is chosen, it is really a "provision for early retirements and replacements." The report is explicit that "no levies are required for depreciation or replacement of properties" but the problem of early retirements and replacements is not even recognized.

(2) The report is obscure in defining "share of network costs" and in describing its use in the analysis of costs. It appears to be a prorate of fixed costs of operating the existing system. But when the item is treated as an offset to revenue deficiencies it would appear that the commission places its farm program on an additional cost basis. There may well be justification for this but it is a little confusing to find this item handled as a cost on one page and virtually as a revenue item on another page. Where it is proposed to take on new farm customers on an additional cost basis, why not explicitly recognize that this is being done?

(3) The calculation of energy costs starts with an average price which, in terms of the range of wholesale rates cited on p. 119, means an annual load factor between 46 per cent and 58 per cent. It would appear, therefore, that the farm program is being given the benefit of load factors to which farm load characteristics do not entitle it, unless

an offset to this factor was deliberately introduced in using 50 per cent energy losses between the wholesale and customers' meters. However, the commission frankly recognizes that power costs may go up if the additional power requirements entailed by the program, in excess of present contract limits, cannot be obtained at the same contract price. It is not recognized that the average price may go up without any change in wholesale rate schedule—by adding a substantial farm load at materially poorer load factors.

(4) The Commission points out that the bonus requirements of half the capital costs cannot be met out of present water power rentals and hence that such subsidies must be met out of other provincial funds or must be covered by increased service rates. But the commission does not explore very thoroughly the various economic justifications, weaknesses, or the incidence of providing such funds for grants-in-aid from sources other than the users of electricity as such, via water power rentals or service rates.

Other readers, depending on their bent or political persuasion, might stress different strengths or shortcomings. Nevertheless, the commission, in the main, seems to me to have done a good job of realistic analysis in laying out a program. It has set a high standard of reporting for sponsors of other similar post-war projects to match—if they can.

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The City: Its Growth, Its Decay, Its Future. By Eliel Saarinen. New York: Reinhold Publishing Co., 1943. pp. xvi, 380. \$3.50.

The exodus of the residential population from the central areas of our urban communities and the haphazard growth of sporadic residential sections on the periphery of our cities has precipitated an economic, social and urban planning crisis of the first magnitude. Something is radically wrong with the character of city growth. Cities

have not been evolving the best type of home communities by their own natural processes. The vital urban problem of today is how to channelize or direct the forces of urban growth so that the best engineering, architectural and planning standards will be achieved in city building in the future. Eliel Saarinen offers a solution as simple in its operation as the laws of physics and biology upon which he draws for analogies.

Declaring that the evils of modern city development have been caused by the coalescing of independent communities into one formless urban mass, he would reconstitute the original communities by providing for green belts around the new residential neighborhoods to be constructed in cleared blighted areas, thus opening up densely packed central urban sections. On the other hand, to prevent the chaotic and formless spread of settlement into vacant areas on the urban fringe he proposes that new organic communities separated by open country be constructed beyond the central urban mass. By transferring property rights from central areas to the outlying vacant tracts selected for these new communities, the present compact central urban core with its scattered suburban fringe would gradually take the form of a series of community clusters, each surrounded by green belts and each with its own shopping centers, recreation areas and industries.

This proposal may come as a shock to our traditional thinking about property rights and to existing methods of building residential sections; but the author's plan is for the ages in which there is time for re-education and the development of new forms and concepts. While Saarinen presents a series of maps showing how the evolution from the present urban structure to his ideal urban pattern can take place in a series of stages, beginning immediately, the chief virtue of his book is the setting up of a goal towards which planning efforts might be directed.

Planners preparing for the next few decades, however, must reckon with existing homes, office buildings, stores, factories, water, sewer, railroad and street car systems which occupy fixed locations, and they must study how the oldest and most obsolescent parts of the city structure may be scrapped and replaced with new elements that will

ultimately form a better city pattern. The author does not offer "a royal road" to planning which will avoid the arduous labor of making analyses of the existing structure of our cities block by block, or which will eliminate the task of making detailed plans for grafting new growth on the old urban stock while utilizing the tremendous physical investments in buildings, utilities and transportation facilities which have remaining useful economic life.

HOMER HOYT

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Economics in Uniform. By Albert T. Lauterbach. Princeton: Princeton University Press, 1943. pp. 282. \$3.00.

This book is a remarkable study of the roots and origins of modern military economy as it has developed (above all) in Germany, and of the impacts of such military economy on the social structure of modern society. Among the many books which have so far appeared dealing with totalitarian economics, this reviewer finds Dr. Lauterbach's book to be the most scholarly, and also the most entertaining one.

The author's intention is stated very clearly in the foreword when he says that his book seeks to derive from the experience of Europe and the Nazi oppressors certain lessons in military economy and social adjustments which the democratic world must understand if it is to survive the present struggle and if it is to preserve and extend after the war the social values which are implicit in a real victory. The term "military economy," as the author uses it, covers both war economy proper and economic preparedness in peacetime, and he attempts to analyze the effects of rearmament and mobilization upon industrialized countries, effects which can have a powerful influence on economy and social structure during the war itself and far into the future.

The basic theme for discussion in Dr. Lauterbach's book may be said to be the

problem of co-operation and effectiveness in our modern economic system. In our democratic societies we say that this cooperation is a voluntary one, and we also usually say that voluntary cooperation is a trademark of democracy. Such a statement seems, nevertheless to need some qualification as it is doubtful whether the necessary degree of cooperation, even in the most thoroughly democratic countries, can be attained without some compulsion. The main feature of a democracy, therefore, is not whether there is any compulsion whatsoever but whether the existing types of compulsory methods are subject to democratic control. The totalitarian economic systems have adopted compulsion as a rule, and have abolished all forms of democratic control.

Dr. Lauterbach points out, and this reviewer thinks he is right, that voluntary cooperation as we used to think of it in our democratic society is superior to autocratic regimentation only if accompanied by two indispensable conditions. First, individual incentives—important as they are—must not be allowed to lead to industrial anarchy or to interfere with efficient social coordination and this presupposes sufficient executive power. Secondly, there must be sufficient time to permit voluntary cooperation to operate. Dr. Lauterbach continues to say that if either of these two conditions is lacking, which happens in time of acute emergency, then reliance upon voluntary factors (in the traditional way) may mean national suicide.

In his chapters on the military society in Germany, the Wehrwirtschaft and totalitarianism, and also on Germany's New Economic Order in Europe, he gives an illuminating analysis of the origins and the development of the German Nazi economic structure. He shows here very clearly how the Nazi economic system—where the "economic motivation" in the usual sense of that term has been completely abolished—has functioned as a military economy, ever since the Nazi party came into power, preparing Germany for the war which inevitably had to come. He also shows how this type of economy and this ideology both have deep roots in traditional German militarism. It has been of great value in these chapters especially that the author has been able to utilize original sources in the German lan-

guage. Likewise, his German background has made possible an unusually well-balanced and thorough analysis of the German development.

A total war like the one we are now fighting makes fundamental economic changes necessary in the democratic countries also. Voluntary cooperation in the traditional sense is no longer sufficient. Therefore, the democratic countries must adopt certain elements of the system of military economy. Those problems, and the difficulties involved in mobilizing the economic resources of a democracy for a total war, are all discussed by Dr. Lauterbach.

While the transformation in a democracy from a peace economy to a military economy may be achieved rather rapidly and without too many political complications, a greater problem will be the transfer from a military economy back to a situation of "normalcy." Dr. Lauterbach's discussion of the trends and problems we will then meet is perhaps the most valuable part of his book and gives an important contribution to the discussion on post-war problems. He visualizes some kind of "return to normalcy" but seems to be inclined to think that the war and the war economy which we have all lived through for some time will have as a result a continuation of some of the controls of war time. It seems very reasonable that it should be so. As complicated as the modern industrial economy is, control measures of the pre-1914 type do not seem adequate any longer.

ARNE SKAUG

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In Defense of the West. By Herbert von Beckerath. Durham, N.C.: Duke University Press, 1942. pp. 297. \$3.50.

This book presents the world outlook of an economist with leanings (in the author's own words) toward the historical or institutional school of economics. His general theme is that a major source of our current societal difficulties stem from the growing

divergence between political institutions and tendencies, and economic institutions and developments, since the late 19th century.

Von Beckerath argues that our type of system requires, for its maintenance and progress, a high degree of mutual compatibility between political aspirations, tendencies and legal institutions, and the organization and administration of government on the one hand, and the economic system and economic life on the other. Throughout the book he points to evidences that this compatibility is disappearing in western civilization.

Part One is devoted to an analysis of the pattern of civilization, in order to familiarize the reader with the perspective from which the author looks at recent events, together with some of his observations on the general problems associated with all civilizations. While not containing new or original material, it is an excellent summary of forces shaping human personalities and societies.

Chapter One analyzes some fundamental concepts of civilization in general and Chapter Two discusses some essential characteristics of western civilization, pointing out that, while we know all the material methods and have all the material means to serve a great civilization, we have forgotten about the ends, with the result that there has been much confusion in social life. The author concludes, however, that it is an error to lay the blame for this at the door of the economic system itself, and points out in Chapter Three that the fashionable tendency, in recent years, to dwell on the "inefficient, chaotic, and spasmodic operation of capitalism and on its growing injustices" does not prove that the system is unworkable but rather that private capitalism will survive only so long as its basic legal, political and technological assumptions are met.

His summary of the logical premises of capitalism is well done and he points out the numerous problems and difficulties involved in meeting these. The political foundations of capitalism are discussed in Chapter Four.

In Part Two the author discusses the breakdown of liberal society, and analyzes the collapse in the international order in 1914, the frustrated reconstruction period which followed, and the pandemonium which

broke loose in the thirties. Part Three discusses the threefold problem of reconstruction—the economic, the moral, and the political. In the case of economic reconstruction, the author points out two major problems which must be solved, namely: (1) the rigidities and maladjustments in the economy resulting from the passing of the old-time peasant and farmer—with his more or less self-sufficient home agriculture, diversified production, and primitive methods—to the industrialized farming entrepreneur; (2) the international aspects of the monetary system—particularly, workable replacements for the old international gold standard—which will permit a liberal world trade system and smooth international intercourse.

In Chapter Nine, "Moral Reconstruction," the author states that western civilization has never been in greater danger from moral confusion and degeneracy than now. He concludes that we are now witnessing a renewed blending of Western and Asiatic influences and tendencies, the result of which nobody can foresee. However, he insists that there are a few great truths which we need more than ever to keep before us in facing the future if western civilization is to survive, the greatest of which is that civilized life cannot prosper—cannot even survive—without strong ethical convictions common enough to control and direct social life effectively.

The author raises a fundamental question at the end of the book, namely, whether western man—the main protagonist of a supposedly western civilization—has the moral and intellectual force to master and subdue the mechanisms which he created but which he cannot keep safely in their subservient role. There must be a universal revival of the desire for something more important than man's material comfort and pleasure. Only this type of revival can strengthen a society sufficiently to keep inevitable economic and political friction under control.

The ethics of violence and combat must be replaced by the ethics of solidarity and of lawful and creative competitive strength. This may take a very long time, just as the pacification of life within nations took centuries to achieve and is still precarious. If

we do not achieve this, the author believes that conquest of space by technology will be fatal to all civilizations.

This is a book which should be read by all students of political economy. It is not only an excellent summary of the major problems and fundamental concepts of civilization but a stimulating discussion of the type of program we must develop to solve the problems facing western civilization.

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World Minerals and World Peace. By C. K. Leith, J. W. Furness, and Cleona Lewis. Washington: The Brookings Institution, 1943. pp. xii, 253. \$2.50.

The authors of this book make a valuable contribution to the problems of post-war reconstruction by focusing attention on the increasingly significant role of mineral raw materials in the world's economy and the impact of mineral utilization upon international relations and disputes.

The book is divided into three parts, viz., I. Physical and Commercial Trends, II. Recent Trends in Political and Economic Control, and III. The Future. A very comprehensive appendix of mineral production, reserves, and refining capacities follows the body of the text.

In Part I is presented, in excellent fashion, a perspective of world mineral production and industries and the relation of these industries to the world industrial pattern.

The discussion on trends serves to point out the increasing rate with which industrial nations are drawing upon the world's raw material supply and the critical problems arising out of this draft.

An instructive contribution to the volume is the chapter on "new" minerals for industry. From the point of view of industrial development and international trade, this chapter is interesting in that it points out that the refinement and improvement of technological processes have brought them into commercial significance, if not from a

tonnage point of view, at least as key minerals which hitherto were merely laboratory curiosities or museum specimens.

Development in mineral utilization, with the accompanying introduction of several new mineral products—especially since World War I—has not, however, changed the basic geographic pattern of the industrial production band upon the juxtaposition of large iron ore and coking coal deposits. The authors see little change in the sources of basic mineral materials and the location of processing and fabricating plants.

A brief review of the mineral position of each of the major powers and the present position of the belligerent groups discloses the lack of an adequate and balanced domestic supply of mineral raw materials necessary for industrial production, even among the great powers. Probably the nearest to self-sufficiency is the U.S.S.R. The mineral position of the Axis powers is indicated in percentage tables of world production and smelting capacities and the strength of their position may come as a surprise to the reader. This mineral strength is vitiated, to some extent, by the inability of Germany and Japan to exchange materials.

The participation of governments in the mineral industries (as expressed in tariffs, quotas and other quantity restrictions, exchange controls and payment arrangements) received its greatest impetus after World War I and was most extended in its control among the nations of the European continent. This is an outgrowth of the spirit of extreme nationalism which followed World War I, accompanied by attempts of many nations to achieve self-sufficiency. The small-state system of tariffs, export and import quotas, limitations on the movements of populations, and other hampering restrictions vitiated the efforts of management to make the most effective use of the production power of modern technology. This was also the period in which the cartel grew and flourished with consequences to productivity which are yet to be evaluated. Prices and markets were controlled and the doors virtually closed to newcomers. The base of the most powerful cartels existed in the metallurgical and chemical industries localized in the Ruhr Valley.

In the final chapter Dr. Leith, the senior

author, discusses the possibilities of international control of minerals as a means of enforcing peace. He reviews briefly the proposals made, but not carried out, at the close of World War I. In a masterly analysis of the multitude of difficulties which are involved and must be overcome before or if a workable plan of using mineral control as a means of preventing war can be evolved, the author himself points toward the practical impossibility of such a plan. To this reviewer, the most critical problem, apart from the tremendous policing task, appears to be that of selecting the controlling group. The suggestion that responsibility for the conduct of a plan of mineral sanctions be placed with the English-speaking peoples would provoke antagonisms from such nations as the U.S.S.R., itself potentially powerful in mineral supply. Against an Anglo-American bloc it would not be difficult to envisage a Euro-Asiatic bloc which would eventually challenge the independence and freedom of action of the Western World. To enlarge the group in order to include a larger number of the world powers immediately increases substantially the probabilities of conflicting claims and disagreements within the controlling group itself.

WALTER H. VOSKUIL

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This Land We Defend. By Hugh H. Bennett and William C. Pryor. New York: Longmans, Green and Co., 1942. pp. xii, 107. \$1.50.

This small book, under the authorship of the chief of the Soil Conservation Service of the United States Department of Agriculture and his associate in that work, is an attempt to state the problems of soil conservation in popular terms and to dramatize the seriousness of these problems. The book succeeds in describing soil erosion in popular terms and in dramatizing erosion losses.

In view of these unstated but obvious objectives of the book, it naturally follows that

the illustrations are taken from among the most extreme cases of soil erosion and soil depletion. This gives a dramatic picture of the problems but it ignores the fine work that has been done by the many excellent farmers who followed soil conservation practices for many years before the Soil Conservation Service came into existence. Little space is devoted to the millions of acres on which soil erosion is not a serious problem or on which soil losses have been recognized and dealt with by the farmer alone. However, if consideration were given to this fact the book probably would lose most of its appeal to the general public and fail in its objectives of popularizing the seriousness of soil erosion and dramatizing its pauperizing effects.

Neither does the book deal with the painfully slow processes of educating many of those on lands seriously eroded so that they will be in a position to use intelligently the maps and plans prepared by the Soil Conservation Service. The impression given is that any farmer can be relied upon to follow these maps and plans and prevent further erosion. Or perhaps the authors assume that the federal government will furnish the intelligence to put these plans into general use. This issue is not discussed in the book. Neither is there discussion of who shall prepare the maps and plans.

The comments on this book by this reviewer are not necessarily criticisms. They are made to acquaint the reader with the things the book attempts to do and to indicate some of the things that the careful student of soil conservation will not find in the book. It apparently is intended to arouse popular interest in and support of soil conservation and is not an attempt to acquaint the careful student of these problems with facts that he does not know. If it arouses popular interest and promotes action in conserving the soils of the nation, it is well worthwhile.

W. E. GRIMES
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Interest and Usury. By Bernard W. Dempsey S. J., Washington: American Council of Public Affairs, 1943. pp. xii, 233. \$3.50.

The title of this small volume is somewhat misleading. The author's purpose is merely to compare the ideas of three outstanding Schoolmen of the 16th and early 17th centuries with those of a group of modern economists. The former comprise Luis Molina (1535-1600), Leonard Lessius (1554-1623), and John de Lugo (1593-1660); the latter, Wicksell, Mises, Schumpeter, Keynes, Fisher, Hayek, Myrdal, and Haberler. The statements of both groups are excellently summarized. The comparison appears in the last chapter, in which an attempt is made to show that the Schoolmen and the moderns had much in common. Schumpeter, in his encyclopedic introduction, states: "If those Schoolmen rose from the dead today, they would readily understand our world and be quite prepared to take part in the discussion of its problems." The author's summary of the attitude of the three above-mentioned Schoolmen on the matter of interest is "that a loan which brought no antecedent loss or sacrifice to the lender could not be the foundation of a title of interest to that lender."

The volume is a valuable contribution to the history of economic thought because of its careful and complete analysis of scholastic ideas of interest and usury.

IRA B. CROSS

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Report of the Committee on Land Utilisation in Rural Areas. Ministry of Works and Planning. London: H. M. Stationery Office, 1942 (Reprinted 1943). pp. vi, 138, 2s. Od.

All land economists, and particularly those who are interested in rural-urban fringe problems, will find this report of the Committee on Land Utilisation in Rural Areas (of England and Wales) of engaging

interest. The committee was appointed in 1941 "to consider the conditions which should govern building and other constitutional development in country areas consistently with the maintenance of agriculture, and in particular the factors affecting the location of industry, having regard to economic operation, part-time and seasonal employment, the well-being of rural communities and the preservation of rural amenities."

The report presents a brief but neatly sketched discussion of the impact of urbanization on the rural English countryside during the past two decades and under conditions of peace and of war. The rural land planning problem, which is being recognized as of increasing importance in many sections of the United States, is, of course, a major national question in the British Isles. For this reason, land economists in this country can gain much by reading this review of past English experience and the discussions of probable post-war trends, available planning powers, and recommendations for future policy which are contained in the report.

In the opinion of this reviewer, the real value of the report stems from the fact that Professor Dennison, an economist, has a long, one-man minority report following the report of the majority—which comprises 11 of the 12 committee members.

Both the eleven-member majority and Professor Dennison have the same basic objectives in mind: a better rural economy with high standards of living and amenity values. Neither side can be judged as more or less conservative nor more or less willing to plan for future social reconstruction. The difference is clearly one of the approach of geography and the point of view of agrarianism evidenced by the majority and the approach of economics and the national point of view expressed by the minority.

Where the two sections of the report agree, the reader cannot but be convinced of the wisdom of the analysis and the recommendations. Where there is disagreement, the soundness of Professor Dennison's analysis is impressive. His statements should be required reading for those who would plan for the use of land without full consideration of the economic implications of their plans. Seldom does one find so clear

a designation of the weaknesses of what might be called static land classification map planning as compared with functional analysis planning. Anyone familiar with the beautiful land utilization maps (really, land cover maps) which have been prepared for Britain in the past decade can imagine the preponderance of the map-planning opinion which Dennison's views have to meet.

Professor Dennison does not deny the importance of non-economic values; rather, he only insists that decisions as to whether higher material standards of life should be sacrificed to other objectives ought to be made at least knowingly and deliberately.

Some phrases of Professor Dennison make excellent "quotable quotes," to wit:

"A 'prosperous agriculture' means little if it does not mean the prosperity of those who are engaged in it." "The idea of a congealed economic and social structure is, indeed, essentially medieval." "Now if it were indeed true that amenities depended thus

closely on agriculture, there might be a case for the extension and protection of agriculture and the limitation of any construction which would be harmful to it. It would rest on the deliberate choice of the community to retain amenities at the expense of lower material standards of life; in this event, . . . the agricultural worker . . . should be paid in respect of his function as landscape gardener and not as agriculturist."

"What is destroyed by physical change is often not physical beauty, but mental associations."

"It is important not to attempt to preserve amenities which can only be preserved so long as full access to them is denied to those whose heritage they are."

"The best line of development is to strengthen and supplement existing forms of control, rather than to attempt to design a wood lay-out of the country in conformity with any particular set of principles."

"The essential need is for more effective planning and not necessarily for a new set of 'principles.'"

LEONARD A. SALTER, JR.

University of Wisconsin

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY
THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of *Journal of Land and Public Utility Economics* published quarterly at Madison, Wisconsin for November 1943.

State of Wisconsin, County of Dane.

Before me, a notary public in and for the State and county aforesaid, personally appeared Mary E. Amend, who, having been duly sworn according to law, deposes and says that she is the Managing Editor of the *Journal of Land and Public Utility Economics* and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, University of Wisconsin, Sterling Hall, Madison, Wisconsin, Managing Editor, Mary E. Amend, Sterling Hall, University of Wisconsin, Madison, Wisconsin.
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MARY E. AMEND, *Managing Editor*

Sworn to and subscribed before me this 21st day of October 1943.

[SEAL.]

Mary A. Klusmann
(My commission expires 7-14-46)

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